

DIARY

The conversation I didn't have with Prince Charles

To Phoenix House. In south-east London, to offer help on heroin to the Heir to the Throne. I became chairman of Phoenix House, (which provides long-term rehabilitation for drug addicts) when I was MP for the area; Phoenix is now responsible for other centres in Sheffield and South Shields, and may well have to open up more this year. Prince Charles's request to visit Phoenix House and learn more about rehabilitation from hard drugs was in line with an honourable tradition. His great uncle David had taken a deep interest in the plight of another oppressed community - the Welsh miners - before he became entangled with Stanley Baldwin and Mrs Simpson.

I wish I could inform TES readers just what he had to say; but I am prevented by the Buckingham Palace Official Secrets Act. I was told by the appropriate folk (not by Charles, I may say) that it is quite forbidden, if you meet the Heir to our Throne, to reveal either what he said to you or even what you said to him. So to stay within the Royal Edict and avoid a Ponting crucifixion, all I can say is that we discussed ways and means of making the Government better informed about the growing dimensions of a horrendous problem.

I can, however, talk about what we didn't discuss - how schools can cope with drugs. There tend to be two ways of going about it - dire warnings against a dangerous and illegal habit - and health education to encourage self-awareness about the nature of addiction to any sort of substance - whether it be glue, alcohol, tobacco or anything else.

The latter is a rather more effective approach. The old argument (fre-

quently employed against sex education) that talking about habits just encourages them, is no longer defensible.

Heroin has now spread far beyond London into quite small provincial towns; unemployment and a general sense of hopelessness has put council estates particularly at risk. The only point of retaining the Royal Family is to let them set a good example. So Prince Charles's wish to get involved in drug rehabilitation should be a stimulus to schools to do the same.



Prince Charles: setting a good example

Nursing chair

I have adopted a New Year resolution to be nice to Baroness Cox; so I include this week a mild rebuke to her fellow peers. The other day when she was on one of her forays against the Inner London Education Authority, the Official Record describes the scene thus:

Baroness Cox: May I draw the minister's attention very briefly to three points which might be helpful. Noble Lords: No!

I suspect what irritates these disorderly aristocratic male-chauvinists is that they see her as a nurse who takes an obsessive interest in teachers.



Nurses: spear carriers in the NHS theatres.

Which brings me to Harry Judge, a teacher who has recently taken an obsessive interest in nurses.

Harry, it will be recalled, looked after Banbury when it was Britain's biggest comprehensive, before going on to run Oxford's department of education. He has recently, however, been concentrating all his energies on

reforming the way in which nurses are educated.

He's been asked by the Royal College of Nursing to chair an independent commission to clear up the chaos left by the last academic who attempted the job - Asa Briggs - then of Sussex and now a fellow don of Harry's, in charge of Worcester College. Since the Briggs Report, good nurses have been sucked into "management"; Harry is trying to get them back to the "Detof face" of the health service; in particular he'd like nurses to be able to work in a multi-disciplinary role with doctors on rather more equal terms.

Harry got the job after considerable canvassing among the nursing cognate as to who would do it most effectively; the other front-runner in the final short list - you've guessed - my Lady Cox.

Hot tips and ...

To the Painted Chamber of the Royal Society of Arts to find myself in the company of important quango-folk like Sir Peter Swynerton-Dyer and Sir Wilfred Cookson to hear the final lecture of their current series on "Education for Tomorrow".

I'd missed John Cassels of the National Economic Development Office on "Work", and Anne Jones of Cranford on "School", so I had to content myself with Dr John Ashworth (once Mrs T's science boffin and currently supreme of Salford University) on "Tomorrow's Universities".

The hottest tip he gave was the Ashworth method of persuading dispensable staff to take early retirement - summation them at 7 am for interview.

Two, John revealed, took the hint without even bothering to turn up.

His talk concerned the purposes of a university, and was entitled "Ivory Towers. Frontier Posts or Service Stations". He properly reminded us that the origin of the first phrase was more erotic than academic. (*Song of Solomon* vii 4: "Thy neck is as a tower of ivory; thine eyes like the fishpools of Gethsemane by the gate of Bath-Elabbai: And there's lots more about navels and bellies. Look it up.)

John Ashworth settled for service stations partly on the grounds that Oxford had always been a service station for the priesthood, but mostly because Salford happens to have a vacant white (rather than ivory) tower block available to become an information technology service station.

If Dr Ashworth disappointed me, it was in his resignation to the A level rat race. You used to be able to get into Salford with a couple of Es, but now you needed Bs, he told us with a

certain glowing embarrassment. "Why?" we asked. Because the University Grants Committee had cut its money last time purely on the basis of A level entry standards.

Later he softened, admitting that his cleverest entrepreneurs had only just scraped in and advising upwardly mobile parents to send their children into further education at 16. With an Ordinary National Diploma, we were told, they'd walk into Salford's 20 per cent "non-traditional-entrant" quota.

... even hotter micros

On a slow train to Malvern Wells to find out about information technology for schoolchildren - before they earn the privilege of entering into Dr Ashworth's White Tower.

Local authority computer education advisers have sensibly got themselves organized into an association which holds periodic conferences and they had invited me to predict their future.

Virtually every local authority in England and Wales had sent their man (the only female in sight was Virginia Makins of the TES) along with a posse of three from the ILEA led by Martyn Weaver - who wound up as chairman of their association.

The nub of the discussion seemed to be whether to leave the school micro to the (male) computer freaks or general-

ize use throughout the school by forcing all teachers to use the new technology, urge them to proselytize whole staffrooms to become computer-literate. They tell me it's not all that easy.

History teachers, it seems, are particularly sales resistant.

I return home to a tale of woe from my rising-five grandson. Someone has stolen his Croydon Infant school book. My Malvern inspectors tell me it's an increasingly common phenomenon - and that few of them are happy because Lloyds won't cover them any more. I suppose one shouldn't worry like disappearing library books, as they're being read and someone, somewhere is becoming (computer) literate.

Christopher Price

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Break college hold on YTS courses, union tells minister

by Richard Garner and Mark Jackson

Schools should become involved in the teaching and training of youngsters on the Youth Training Scheme in the same way as colleges of further education are.

This is the line put firmly by teachers' leaders to Lord Young, the Cabinet Minister working on plans to extend the scheme to a two-year programme.

In a private meeting last week leaders of the National Association of Schoolmasters/Union of Women Teachers told Lord Young they were worried about the lack of educational content in college YTS schemes.

Mr Henry Iken, the union's assistant secretary, said: "The education of pupils on YTS has suffered as a result of the scheme being concentrated in further education."

Working groups would have to be set up to investigate its widespread introduction into schools, he said. But Lord Young had expressed interest in the NAS/UTW's proposals.

The NAS/UTW's view is echoed by other teachers' unions. Mr Peter Smith, deputy general secretary of the Association of Masters and Mistresses, said: "I think the NAS/UTW is right - but essentially they are putting their fingers on a very much larger problem."

This union had just surveyed 200 institutions teaching 16 to 19-year-olds - including sixth-form colleges, further colleges and further education colleges - asking them what constraints they faced in offering courses.

And already it is clear, he said, that sixth-form colleges feel constrained by education regulations; thus blocking provision of running courses like YTS.

The distinction between institutions operating under schools regulations and FE regulations is wholly artificial and wholly arbitrary and badly needs working out," he added.

The NUT, while critical of the YTS scheme, says it should be extended to schools - especially in rural areas. The union believes the amount of pastoral care and guidance offered to youngsters in a school environment is greater than in FE.

A number of schools are already participating in the YTS despite a notable lack of enthusiasm from the Manpower Services Commission. Its official spokesman Lord Young's view of YTS has been a disastrous escape from the school system.

The DES - presumably for different reasons - shows even less interest. Its officials say that they have not heard of any schools being involved in the scheme.

They say that, although there is nothing in the schools' regulations to prevent their participation, the provision of the 1944 Act which bans part-time attendance would seem to make it impracticable.

It is likely that most, if not all, the schools that are already participating are, in fact, community schools, which are able to provide part-time instruction as part of their adult education activities.

But there is a much larger number of schools running special courses for unemployed leavers on the dole who are not allowed to study for more than 15 hours a week initially, and for up to 21 thereafter. This suggests that the ban on part-time teaching is no longer being enforced.

There are three ways in which a school can participate in the YTS:

- As a Mode A managing agent, getting a block grant from the MSC out of which it pays the trainees and employing them for work experience with employers;

- As a Mode B sponsor, like many colleges, under which the MSC pays the trainees and reimburses the costs of training them; and

- As a provider of off-the-job training for schemes run by Mode A employers.

In all three cases the school's main strength is in teaching skills such as typing, catering, information technology, and basic life and social skills.

Mrs Anne Jones, head of Cranford community school near Heathrow, provides off-the-job training for British Airways and Thorn-EMI YTS trainees. She says that it is important for teachers to recognize that the youngsters insist on being treated as adults.

She believes that schools could have a major role in the two-year YTS which it is expected will be announced in the Budget statement. They could take the responsibility for providing the first year of the training, making it a proper education and the hard industrial and commercial training which the second year is intended to offer.

Employers add the new YTS, page 14



A disturbing picture of growing numbers of families on the breadline is detailed in new figures collected by the Inner London Education Authority. A quarter of all children in London's primary schools are from families that have both parents out to work, and nearly half inner London's primary schoolchildren and 40 per cent of secondary schoolchildren are entitled to free school meals.

ILEA's index of educational deprivation reveals that among some immigrant communities unemployment has reached staggering levels. Hackney (picture above) is listed in the report, "Children in need", as the area with the second highest rating on the index. Reports, page 8.

Storm over 'occult' book

by Bert Lodge

The Association of Christian Teachers has backed a London vicar's protest against a religious education textbook which encourages 10 to 11-year-olds to dabble in voodoo and black magic.

Beginning Religion invites pupils to make up spells and record them "in a spooky voice"; think up reasons why black magic might work; suggest uses for a crystal ball and tarot cards and find out what happens at a seance.

"While lacking anything distinctively Christian, it possesses much which is distinctly pagan," Canon John Short, vicar of Christ Church and St John's, New Malden, said this week.

"Children of such tender age are taught how to begin their religious studies with no concept whatever of a God who has revealed Himself in the Scriptures and in the person of Jesus Christ."

Mr Richard Wilkins, secretary of the Association of Christian Teachers, commented: "It invites them to engage in actual religious practices of a very unhealthy kind and in a way they would not be expected to do if they were praying at Easter."

The book was defended by Mr Ray Bruce, co-author and a former RE teacher-adviser, although he conceded that after complaints to the publisher, Edward Arnold, the seance exercise had been taken out of the latest edition.

He maintained that children were already quite knowledgeable about such topics by the time they began secondary school.

L.e.a.s face new front in pay action

by TES reporters

Local authority leaders faced the prospect of industrial action on a new front by college lecturers this week.

This followed last week's remarks by Sir Keith Joseph, which killed off hopes of an extra 7 per cent pay increase for teachers in exchange for agreeing a new contract.

Their hopes of bridging an early end to chaos in primary and secondary school classrooms - based on a new initiative drawn up on Wednesday - also appeared doomed.

The employers agreed to ask the teachers if they could jointly appoint an independent conciliator to try to sort out the differences between the two sides. But Mr Fred Jarvis, general secretary of the National Union of Teachers and leader of the teachers' side during the pay negotiations, appeared to rule out this initiative.

The management's unanimous decision to seek conciliation seems to represent a change in direction for Conservative local authorities. Last week a proposal for conciliation was rejected by Tory members of the Association of County Councils' education committee.

Despite this, Mr Jarvis said the best way forward would be for the employers to return to the Burnham Committee, the formal pay bargaining body, and accept the teachers' proposals to hold separate discussions on pay

and conditions.

Before Wednesday's meeting of the management panel, Labour and Conservative authorities had been publicly split over what Sir Keith had meant by saying he could see "no prospect whatsoever" of an extra 7 per cent on top of this year's salary agreement. At the meeting, though, they were united in pressing for an independent conciliator.

The prospect of offering an independent review of teachers' pay and conditions was rejected by the Prime Minister in the Commons on Tuesday. During question time, she said she could see no reason for such an inquiry.

Both local authority leaders and college lecturers' representatives also expressed pessimism about the outcome of their structure talks. NATFHE members are being warned to prepare for selective industrial action.

Mr David Trieman, negotiating secretary of the National Association of Teachers in Further and Higher Education, said: "We were all of us bargaining in good faith. We were being told the money was there."

Meanwhile, selective strike action continued for its seventh week in Scotland over a claim by teachers for an independent review of their pay.

EXTRA Computers

Including a three-page survey of different versions of LOGO. Also software reviews; features on the impact of computers in primary education, music, career education and field studies and a survey of on-line services.

PEOPLE...

Mr Naz Bokhari, deputy head of Haggerston School, to be head of Ernest Bevin School, London, on the retirement of Mr David Potter in April.

Mrs Margaret Rudland, deputy head of Norwich High School, to be head of Godolphin and Latimer School, London, from next January. Mrs J. Cienchy, head of St George's School for Girls, Edinburgh, to be head of North London Collegiate School, on the retirement of Miss M. McLaughlin at the end of the year.

Dr Brian Nicholson, a former research fellow at Trinity College, Cambridge, to be head of Dartington Hall School, Devon, from April.

Mrs Susan Hopkinson, deputy head of Queen Ethelburga's School, Harrogate, to be head of Stoner School, Melsbarn, on the retirement of Miss Doreen Denmark in September.

Professor Stewart Rose, Sutherland to be principal of King's College, London, in succession to the late Lord Cameron of Balnagown. He was formerly vice-principal of the college.

Mr Mike Bruce, education research fellow at Thames Polytechnic, to be chairman of the Standing Committee for the Education and Training of Teachers in the Public Sector.

EVENTS...

February 25 Black teachers in language education group meeting from 5-7 pm at the University of London Institute of Education, Room 705. The topic for discussion will be language teaching provision in the

I.e.a.s. Future meetings will take place on the last Monday of each month during term time at the same time and place. Details from Salford Aladdin 01-672 1746.

March 23 School Natural Science Society presidential address by Dr Jonathan Miller on "Metaphors in Science" at Whitehead College, London SW15 at 2.30 pm. Admission free, non-members welcome.

March 30 National Association for Pastoral Care in Education inaugural meeting of the Northern and Association on Tutor Time with Harold Haller at First High School, Ashington. Details from Carol Snelling or Judy Loggie at First High School, Ashington. Details of membership of the northern region of the NAPCE (which extends from Cleveland to Scotland) from Gordon Watson-Broughton, Ponteland County High School, Ponteland NE20 9EY.

Music for Youth Regional auditions for the National Festival of Music for Youth to be held at the Royal Festival Hall in London in July will take place throughout England, Scotland and Wales during March. Full details from NFM (Regional), 23a Kings Road, London SW3 4RP, or telephone 01-730 2628.

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Villas, London SW8 2EH. Fee £8 (£6.50 to WEF members)

March 2 Association of Teachers of Italian conference on Assessment and Examinations in Italian at the Polish Heath, 55 Princes Gate, Exhibition Road, London SW7. Fee £6 (£4 members). Details from Mrs A. Farrel, The Retreat, Kingfield Road, West Kingsdown, Sevenoaks, Kent TN15 6LL.

March 9 Language, Mathematics, Topic Work and Educational Television a conference at the University of York, Acute College, Spaulding Road, London SW7. Fee £6 (£4 members). Details from Mrs A. Farrel, The Retreat, Kingfield Road, West Kingsdown, Sevenoaks, Kent TN15 6LL.

March 20 National Association for Outdoor Education and Sports Council one-day seminar for youth workers, teachers and students on "The Management of Risk" at Wolmerhampton Polytechnic. Details from Jerry Allen, Faculty of Education, Wolmerhampton Polytechnic, Wokingham, RG40 3AB. Details from the Secretary, Audio Visual Centre, University of York, Heslington, York YO1 5DD.

March 27-28 and 28-29 Social Administration Association residential conference for A level students and teachers on "Poverty, the Family and Social Policy" Details from Michael Brown, 2 The Glade, Newbury, Berks RG13 4SFL.

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schools £500 by writing not more than 750 words on "What has engineering ever done for me?" (students 11 to 19) or "What can industry do to improve the image of engineering as a career for young men and women?" (teachers, careers officers). For full details write to the TES Engineering Essay Competition, EOS, PO Box 176, 54 Clarendon Road, Herts WD1 1LB. Entries by March 31 1988.

Portrait Photography Impressions Gallery, York and National Portrait Gallery Education Department photographic competition for children aged 8-18. No entry fee is required. Children are asked to submit up to three black and white portrait photographs, unmounted, with photograph title, name, address and age on the back. Entries to Impressions Gallery, 17 Collingate, York by June 21. Prizes will be awarded in three age groups: 8-12, 13-15 and 16-18 years.

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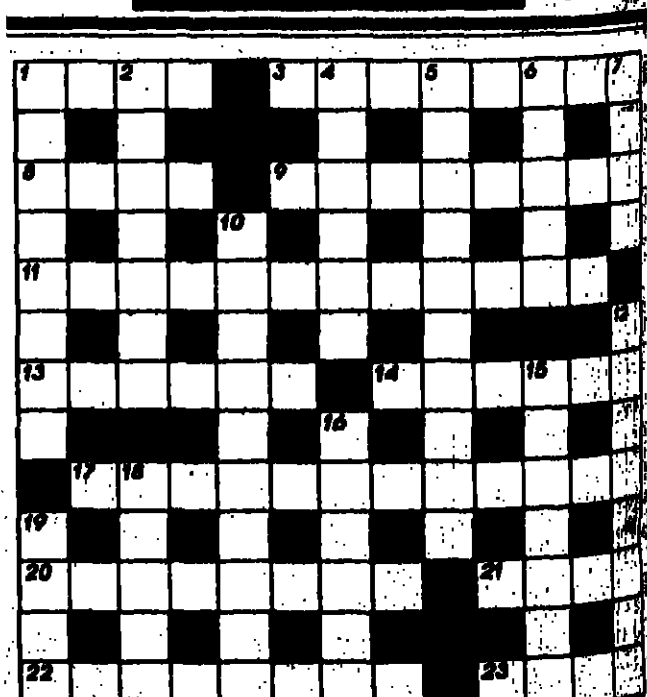
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No 191 CROSSWORD by Rulus



Across

- 1 Sailor's refuge in drink (4)
- 3 Ode to a sweet (5,3)
- 5 Over-disposed to wander (4)
- 9 Bean 'id a chick's name, we hear (6)
- 11 Looks into construction at given sites (12)
- 13 Keeping up an empty apartment (6)
- 14 Is to think about (10)
- 17 Cut a joint of lamb for the table? (4,8)
- 24 Soundly who show no compunction in breaking into homes (8)
- 25 Sort of wolves apparently extinct? (4)
- 26 He looks very sour when upset (8)
- 27 He employs us before the queen (4)
- 28 It's twice as good as a pig. What's a pig? (4)
- 29 Not his sort of pig (4)
- 30 Vessel carrying food from Loin (4)
- 31 Frenchman grubby vent (4)

Down

- 1 Not all is given to an accident (8)
- 2 It brings new life to a play, for example (10)
- 4 What Germans say at celebrations where port is drunk? (6)
- 6 There's a lot to be said for being this (10)
- 8 Fire-arm part (5)
- 7 The way to travel to get home (4)
- 10 Etymological definition of the Mene. TTY (6, 4)

Solution to puzzle in No 190

- 1 DOWN
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- 29 DOWN
- 30 DOWN

THIS WEEK

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- TEACHERS' NEWS 29
- TEACHER

Counting the teachers out

As the miners were counted back to work this week, the teachers were counted out, the next shock wave of organized labour to hurl itself at an implacable Government.

There can be little doubt now that the teacher unions' real quarrel is with the Government, and that the local authority employers are playing a more than usually helpless piggy-in-the-middle role, with virtually no room left to manage or manoeuvre unless public sector pay policies are breached significantly enough to make the structure package a saleable proposition again, if only for the longer term. That is still a more credible proposition than expecting Mrs Thatcher to sanction any agreement to throw money at the confrontation in the short-term.

In these circumstances, it is particularly difficult to see how the local authorities - after Sir Keith Joseph's latest kiss-of-death intervention - can unite on any effective policy except to sit it out until agreement can at least be reached to seek conciliation and eventually, presumably, arbitration on this year's pay claim. And that point is only likely to arrive after some weeks of mounting bitterness, during which public sympathy for the teachers' justified claim for a worthwhile rise is eroded by parental worries about lost schooling and exams.

Given that such a scenario must be expected to have an ending even more unsatisfactory than last year's, it is more than ever essential to explore thoroughly what the possibilities are in a structured world.

So the first question which has to be asked is whether the Secretary of State for Education really dealt such a mortal blow to the structure package with his brutal financial realism in the House of Commons last week as has since been claimed, or pretended, in some quarters. Or alternatively, whether the figures he quoted and dismissed meant

that the employers had been deceiving the teachers all along about the amount of money that might be found, or that he had changed his own mind.

The truth is that it wasn't so much what Sir Keith said, as the way that he said it, that caused all the over-reaction (and handed to the NUT on a plate the ideal opportunity to ballot a membership which now has its leaders' lack of faith in the structure badly confirmed). Hansard has seldom been read so carefully in the education world as it has this week, and the small print revealed nothing new in his position that should have come as a surprise to those involved in the negotiations.

The crucial words were: "I am aware of the suggestions that an extra 7 per cent might be available in addition to the increase that might result from annual negotiation. I see no prospect whatsoever of such an increase."

If we go back to what he put into writing, what passes for the educational Crown Jewels is the letter sent to the employers' leaders, Mrs Nicole Harrison and Mr Philip Merridale, last July, in which he made the unqualified promise to commend to his colleagues a package of proposals from the Burnham Structure Working Party as soon as something acceptable had been agreed.

When the employers' leaders met him on November 14 with proposals along those lines ready to unveil, and with costs already trimmed under the watchful eye of the DES to around 7 per cent, it seems to have been clear to everyone present that that figure represented something like his ceiling. (If anything, he would have preferred it to be less). Seven and a half per cent for structure plus 3 per cent as the going rate for inflation was "out of reach".

An alternative way of doing the sum which the employers tried then, and are still half-heartedly hanging on to, is to recognize that a structure deal

could not possibly be concluded in time for a full year's costs to be payable this year. For a structure deal starting from, say, September that could set out a sum like 4 per cent + 3½ per cent, with an answer once again in the region of 7 per cent. (An answer also to be arrived at if you read carefully the small print of the LACSAB letter of February 7 which talked of adding 4 per cent to the price of a full year's structure deal).

But there was more bad news at that November meeting. Sir Keith did not expect 1985-86 targets to be eased to allow for a structure deal, so any extra money would have to be found especially by him. And it was now clear that he was not prepared to pay more than 3 or 4 per cent extra for all the benefits that were supposed to flow from it. The effect of last week's intervention was to make crystal clear to everyone the totally unrealistic low price he is setting on such a package.

Whatever happens now to this year's pay claim, and especially if it ends in disappointment, the structure talks need to be resumed for next year and the years after, because even at the present modest level they provide a worthwhile base for pay aspirations in the future. Answering a question in the House in December, Sir Keith estimated the annual cost of the proposals as building up over seven years to £650m, or 15 per cent at current prices.

So if structure is dead for this year, it will soon be urgent to start talking seriously for next year if the cost is to be recognized in RSG targets for 1986-87. That means agreement by July, which is where we came in last year. The local authorities have done their homework on the proposals in that wasted year, but if there is to be any real inducement for the teachers to start discussing them - in whatever forum can be devised - Sir Keith will have to offer something more positive to back them up.

COMMENT

State of the Acorn

Olivetti's takeover of Acorn Computer came as a huge relief to the many schools and local authorities that invested in the BBC microcomputer. Whatever the attractions of the new generation 16 and 32 bit micros (see Mike Doran's article in the Computer Extra, page 38) the BBC micro still has a few years to serve out in many schools.

Acorn's dominance in school computing - won thanks to public money with the BBC contract and the Department of Industry, Science and Technology - has had plenty of critics (not least rival British and American companies). One result has undoubtedly been that a lot of effort and ingenuity has gone into cramming software onto what these days is extremely limited memory space.

But at the time when local authorities were making their decisions, the BBC micro was a perfectly sensible but sophisticated and friendly for its time, and expandable. And the standardization imposed by the DOI's restricted offers helped the development and dissemination of higher quality educational software.

The existing machines in British schools will continue to do many things perfectly well. But it is important to develop educational uses for the latest "state of the art" computers if Britain is not only to keep its widely recognized lead in educational computing, but to avoid lagging behind other countries.

For example, the major new French programme for secondary schools will be based on second generation business computers, not the first generation home computers found in most British schools. And the United States has far more research and development based on the latest powerful and increasingly easy-to-use machines, and some impressive results are beginning to emerge.



In Britain, local authorities strong on the applications of information technology in schools will continue to blaze trails, using the latest machines. But if their work is to be widely applied in schools, and exported, continuing national development funds will be needed. The DES is currently considering what kind of national initiative will be needed when the Microelectronic Education Programme ends next year.

It must recognize the need to encourage capital investment in the latest computers, and the development of educational software that makes the most of their power. And this on a large enough scale for the kind of grassroots development that has succeeded well in the past, and for reasonable numbers of secondary pupils to become familiar with today's information technology, not the day before yesterday's.

The precise nature of the Arts Council's accountability is a moot point, but its policy decisions are clearly a matter of public interest. The curious situation which has arisen over the fate of its literature department raises questions

which go far beyond the issue of justice to the individuals concerned, and even beyond the issue of public support for literature itself. As we went to press a furious campaign was being waged by literary organizations to persuade the Council, at its meeting on Wednesday, to reverse the decision, taken apparently at management level, to axe its literature department and to leave its residual literary affairs in the hands of a part-time officer answerable to the deputy-secretary general (whose scepticism about the value of the Council's activities in this quarter is well known).

A budget of £518,000, with numerous dependent clients, is of course far too complex a matter to be handled effectively by this means. The perennially beleaguered Poetry Society and National Book League, and several magazines including the splendid *London Review of Books*, will be wise to look to their defences, as a total pull-out from the field is presumably envisaged after a further unsatisfactory year or two.

Arts Council support for music and the theatre has long been self-evidently necessary: its help for writers, publishers and readers rests on arguments which its impulsive decision-makers seem unable or unwilling to grasp. The relative smallness of the literature budget, the relatively small size of the Council's other departments, and the

scale of the "industry" it was designed to serve - should not have blinded them (though it clearly has) to its inefficiency.

There is plenty of evidence, for those with eyes to see, that this potential has already been realized. Without Arts Council support, poetry publishing will immediately wither in some quarters. The list of first-rank authors who were originally helped on their way by Arts Council grants is a long one; a number of important books owe their existence to the same source. Sir William Rees-Mogg is fond, as his literature director is, of adducing the shortage of ideas as to how the Council's literature funds might be used: this is simply nonsense. There has been, however, an acute shortage of conviction and imagination in the upper reaches of his organization.

But back to the mechanics of the decision. The official line is that it was implicit in the risibly ill-argued literature section of *The Glory of the Garden*, but that is stretching the truth somewhat. Is it perhaps not so much a "decision" as the opening play in a bout of industrial bargaining? Is this a forerunner of the "new managerial style" rumoured to be in the office at 105 Piccadilly? If it is, shame on Sir William and his henchmen. Unless the 19-member Council change their spots and for once assert their determination not to be trampled on, they will merely reinforce the growing public conviction that they have no further effective function, except as a seemingly democratic cover for the dictates of the managers.

no comment

"I told her that if she wanted to run her little round boys and become a tart, we would send her to the local comprehensive, because we weren't prepared to pay for her to go to private school any longer."

From "Parents and the new faces of the SATS" by John G. Hargrave, *Education Today*, 17, 1985.

Second opinion

Left to m'learned friends?

Arguments in the High Court on Friday over whether the National Union of Teachers' nation-wide withdrawal of goodwill involves a breach of contract provided a salutary warning for teachers of the sort of contract they might get if it were left to the courts.

There were several indications as to how such a contract might shape up during the hearing of the influence brought by Solihull Council against the NUT.

At one stage, the NUT's QC, Andrew Hillier, acknowledged that had "some difficulty" in arguing that providing cover for absent colleagues was not part of a teacher's contract. Another, Mr Justice Warner, based the case, said that teachers who volunteer for lunchtime supervision should at the very least, give their teachers adequate warning of an intention to withdraw such cover. Solihull argued that the act of volunteering made the duty a continuous commitment.

The NUT does not intend to raise the whole question of the teacher's contract by appealing against the judgment, and Solihull is unlikely to take the case any further. It could for damages incurred while teachers were withdrawing their goodwill without a ballot - but it would be difficult for it to prove it had suffered financial loss.

However, that does not mean the issue will not come before the court again. Several local educational authorities are threatening to demand wages from teachers withdrawing goodwill and an aggrieved teacher suing for loss of income could raise the legal argument.

Whilst the NUT was busy defending itself in court against the Solihull injunction, the National Association of Schoolmasters/Union of Women Teachers decided that it would not because - in the words of its deputy general secretary, Mr Nigel de Ome - it did not want "some fuddy-duddy judge" deciding what constituted a teacher's contract.

Such comments could obviously be interpreted as unkind to the Mr Justice Warner of this world. However, it is true that he showed himself during the course of the hearing to be less than a *fall* with the way schools are run. In considering whether the NUT could boycott sports and drama activities during the lunch-hour could be construed as an inducement to a breach of contract, he asked: "Does this mean that children sit down at their desks and watch a play?"

Mr Alexander Irvine, of Solihull, sought to remind Mr Justice Warner of the fact that "I don't know if the children have a quality playing for them during their lunch hour."

This aside may seem frivolous but it does lend support to the view that those involved in the world of education could be better qualified to judge what a teacher's job involves.

The indications are that a teacher's contract shaped in the courts would contain an element of covering for absent colleagues and a tightening up of lunchtime supervision. Arrangements - just the sort of things set out in the management plan's support package.

There would be one crucial difference, though - a High Court judge would not allow any room for extra pay for this new definition of their contract.

The lesson to be drawn is obvious: there is an urgent need to find some current breathing space to find some satisfactory forum for discussing a contract for teachers before it is laid down on tablets of unnegotiable stone.

Parents benefit in new code for place appeals

by Susannah Kirkman

A new code of practice for school appeals committee will mean extra work for local authorities and should give parents a better chance in battles over school places.

The code puts the onus on I.e.s.s to prove that the admission of an extra child would "prejudice the provision of efficient education or the efficient use of resources."

Authorities will have to justify their case if they refuse a child a place on the grounds that education would suffer if admissions limited were exceeded. And appeals tribunals will have to decide whether a possible drop in educational standards would outweigh the consequence of refusing to comply with parents' wishes.

The code is not legally binding, but ombudsmen and law courts will take it into consideration when they are dealing with complaints of maladministration or appeals from parents. According to a spokesman for the Association of County Councils, any departures from it must be for "good, justifiable local reasons".

Some I.e.s.s fear that the code will increase their administrative load and that more parents will appeal against the decisions of appeals tribunals. They feel it will be difficult to prove that an extra admission would prejudice efficient education unless the class size is already way over an acceptable limit.

The ACC says evidence could hinge on factors like the capacity of school laboratories. I.e.s.s might have to produce such evidence as a shortage of desks for pupils, or explaining why teachers would be unable to cope with larger classes, says a spokesman for the local ombudsman.

Head teachers may be expected to justify an exclusion to the committee.

And falling rolls at neighbouring schools cannot be used as an excuse unless it can be proved, for instance, that the curriculum of that school would suffer if numbers were allowed to decline beyond a certain point.

In South Glamorgan, where the conduct of an appeals tribunal was criticized in a High Court judgment last year, the authority has now worked out the exact cost of an empty place in an under-subscribed school. Every school appeals case now receives very detailed attention and the authority is taking pains to quantify the damaging effects of extra admissions.

But South Glamorgan does not feel it is fair to use heads or teachers to argue the I.e.s.s policy, even though the authority is under pressure to do so.

The revised code has been influenced by the judgment against South Glamorgan, which ruled that a South Glamorgan appeals tribunal should have considered whether one extra admission at a school would be more damaging than denying parents their first choice of school.

The three local ombudsmen in England have also criticized I.e.s.s for failing to set out evidence for their rejection of parents' appeals. The new code suggests that appeals committees should also write to parents after the appeal to explain the reasons for its decision. And it recommends that appeals should be heard before pupils are due to start the school concerned, to spare parents and children unnecessary worry and uncertainty.

The code has been drawn up by the local authority associations and the Council on Tribunals - the Government body which monitors tribunal cases.

Labour councils to set rates battle strategy

by Mike Durham

A head-on confrontation between local authorities and the Government over rate-capping will move a step nearer next week when high-spending Labour councils hold coordinated crisis budget meetings.

At least 25 Labour councils, including eight Labour education authorities, are expected to adopt a policy of non-cooperation with the Government when they meet next Thursday and Friday.

Many authorities may simply refuse to set a rate for the next financial year. Other options open to councillors are to continue overspending, and set a deficit budget, or to levy an illegal rate in defiance of the rate-capping legislation.

But the outcome is uncertain because elected members may be deterred at the prospect of being fined, made bankrupt and disqualified from office if their actions are successfully challenged in court.

Three rate-capped I.e.s.s, the Upper London Education Authority, Haringey and Sheffield, are among the 16 rate-capped Labour local authorities leading the opposition. A fourth, Brent, which is Conservative-led, has agreed to comply with government spending restrictions.

The other Labour-controlled I.e.s.s are at the forefront of the rates battle, even though they have not been singled out for rate-capping in 1985-86. They claim the Government's spending targets are far too low and may also refuse to set a rate.

In Liverpool, council leaders say that unless an extra £300 million in Government aid is made available, they will have to sack 15,000 employees.

In Manchester, councillors claim that education cuts of about £14 million will have to be made if the council is to meet government spending targets. The alternative is a rate rise of 79 per cent.

Avon says it would be forced to cut £12½ million from education spending next year, with drastic reductions in nursery education, FE awards and school meals subsidies, teachers centres, in-service training and many other areas.

Education spending in North Tyne-side is planned to rise by 10 per cent next year to allow for growth with extra teachers, higher capitation and new nursery units. But council leaders acknowledge this could not be achieved if the government's spending targets are to be met.

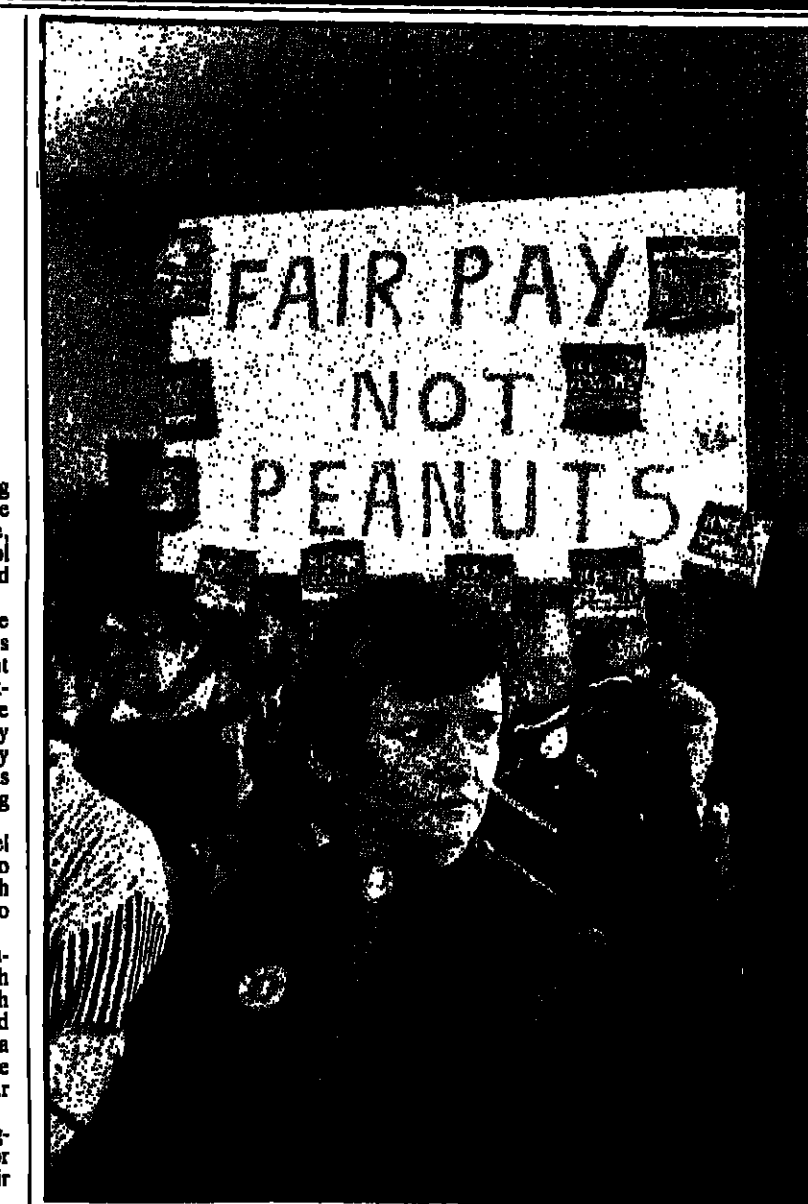
And in Newham the Labour leadership estimates that it will have to make 16.5 per cent cuts to meet targets. The council expects to try to carry out a "standstill" budget based on this year's spending.

All five councils believe they are likely to be rate-capped in 1986 on present form, and are joining the opposition to the rate-capping legislation.

Teachers in four local education authorities facing rate-capping this year will hold a one day strike next week to protest at the cuts in education spending and threat to jobs that could follow.

The National Union of Teachers has "old" branches in inner London, Haringey, Brent and Sheffield. They will have official support for the action next Wednesday.

NEWS



Sideways glance: Mrs Glenys Kinnock, wife of the Labour leader, at the start of a rally last Tuesday to launch the three-day strike action in 10 Brent schools, as part of the nationwide action by the NUT in pursuit of the teachers' pay claim. Mrs Kinnock is the NUT representative at Wykeham junior school, where she is a part-time teacher. Pay round-up page 6.

Northants exam results worry HMI

Northamptonshire's exam results are cause for concern, according to a report by HM Inspectors on education provision by the authority.

Although HMI found a great deal of competent work in schools and colleges, it noted that O and A levels results were below the national average: 18.9 per cent of Northamptonshire's school leavers gained five or more O levels compared with the national average of 23.3 per cent in 1982-83.

A level performance also lags behind the rest of the country. In 1982-83, the national average showed that 14.3 per cent of leavers achieved one or more A levels, while in Northamptonshire the figure was only 10.3 per cent, a smaller percentage than 10 years ago.

Northamptonshire increased its funding of books, furniture and equipment in 1983-84, but secondary schools had only a "precarious" supply of textbooks.

The overall picture was generally satisfactory, but HMI said school work tended to be aimed at a middle range of ability "leaving the more able pupils insufficiently stretched and challenged and the less able in need of support".

Other areas of concern include: the high number of small rural schools, which are expensive to maintain;

the difficulty of some of the smaller middle schools in covering a broad curriculum;

the large number of small sixth forms, which are expensive and fail to provide a sufficiently rich and varied "intellectual challenge".

Sir Keith Joseph, the Education Secretary, has discussed the report's findings with the authority.

Advice abounds on drug abuse

Teachers, local authorities and parents are to be deluged with advice on how to cope with teenage drug users, as part of the new Government initiative against drug abuse.

The Department of Education and Science is also to launch a campaign to persuade I.e.s.s to take the problem seriously, and encourage them to set up locally-coordinated units.

The DES campaign will run alongside the controversial £2 million television advertising campaign announced this week. The television ads, to start in April, will be aimed at teenagers who are "at risk" - then ones who might try hard drugs.

The DES campaign, aimed at I.e.s.s, teachers and youth workers, is seen as the first stage of a long-term commitment.

I.e.s.s will be encouraged to coordinate advice and rehabilitation agencies in their areas, including teachers, heads and school health advisors, to provide a well-organized local safety net for at-risk pupils.

The Wirral has been praised for its locally-organized drug notification system. The authority is to be given £10,000 to continue its work.

The Educational Management Information Exchange, part of the National Foundation for Educational Research, is to be given £11,000 to set up a pool of information from I.e.s.s on the extent of the problem and how it is being handled.

Guidelines to all I.e.s.s on locally-managed schemes to be sent out in April will be accompanied by a booklet for schools on drug abuse, symptoms to look for, and advice on how to cope with "at-risk" pupils.

A further £85,000 is being given to

the Health Education Council to produce factual material for teachers, youth workers and college lecturers, in cooperation with drug advisory bureaux. The advice will be available in about a year's time.

The DES initiative follows a series of internal HM Inspectorate reports on the drug problem in schools, which revealed that teachers are generally ill-informed about the nature of heroin abuse and unwilling to take the responsibility to do anything about it.

One grey area is in-service teacher training. At present only a few hundred teachers a year go on in-service drugs education courses, and there are no plans to increase provision yet.

The television campaign is to be accompanied by a Department of Health leaflet for parents, which will tell them how to seek professional advice.

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Geraldine Hackett looks at inner London's cycle of deprivation

ILEA report paints picture of poverty

The number of London families on the poverty line is growing. In two years the number of children in primary schools from homes where parents are out of work has increased by 36 per cent.

New figures produced by the Inner London Education Authority's statisticians show that one in four primary schoolchildren has parents who are unemployed. In parts of inner London, such as Tower Hamlets, the figures rise to half of all children in primary schools.

The statistics are collected by the ILEA as part of its assessment of educational disadvantage, in order to provide a basis for the allocation of additional resources to schools.

The latest survey, which updates data collected in 1983, shows that nearly half of all primary schoolchildren in inner London and almost 40 per cent of secondary children are entitled to free school meals.

Among some immigrant communities, the survey found unemployment figures much higher than the official figures collected by the Department of Employment. Among Bangladeshi parents of primary children the unemployment rate in mid-1984 was 64 per cent - twice the figure recorded two years previously. The Department of Employment figure puts male unemployment at 27 per cent.

Such families have been badly hit by the recession in the rag trade. The discrepancy in the two sets of figures is likely to be due to the fact that government statistics count only those unemployed who claim benefit and give an unemployment rate among the economically active.

The leader of the ILEA, Mrs Frances Morrell, said this week that



London decay... the Hackney look



the level of poverty indicated by the figures was a public scandal. The Government was telling the ILEA it should cut £66 million from its spending this year, yet the education needs of children in the inner city were on the increase, she said.

"These levels of poverty are of deep concern to the education authority because they are among the measures of educational need on which we base the planning of our resources."

The fact that the measures of deprivation were greater in primary schools meant the pattern of poverty being established would persist.

"What we are seeing among inner London's primary school children will become a cycle of deprivation unless there is major intervention," she said.

The report shows the gap between the poor and better-off areas increasing. In 1984 unemployment among parents in Greenwich was calculated to be 18 per cent, 3 per cent up on 1982, whereas in Tower Hamlets, unemployment had gone up by 13 per cent in the same period to 41 per cent. The measure of deprivation - the educational priority index - also shows a higher proportion of pupils using a language other than English at home. The figures show that 23 per cent of primary children and 19 per cent of secondary use a language other than English at home.

Of other social factors measured by the index, all education divisions in inner London show a slight increase in one-parent families. One in four chil-

dren in inner London schools is from a one-parent family, and in half those families the parent is unemployed.

The most deprived boroughs are Tower Hamlets and Hackney - a ranking order that has not changed since 1983 - but their score of disadvantage has increased more sharply than other areas. In 1983, primary schools in Tower Hamlets scored 38.6, and in the latest survey, 42.7. Hammersmith, Fulham and Chelsea - the division that ranks fifth out of ten in the primary school sector recorded only 1.55 points above its 1983 score of 30.19.

The only change in order of boroughs is that in the primary sector, Camden is now third, displacing Islington.

The figures show a slight variation between the primary and secondary sectors: Hammersmith is listed fifth in the primary sector, with a higher score than Lambeth and Southwark, but seventh in the secondary sector. Greenwich remains the least deprived borough in both primary and secondary schools.

Overall, the report concludes that levels of poverty as measured by free meals and parental unemployment have increased substantially since the last survey in 1983, and the increase has been disproportionately greater for black and ethnic minority pupils.

The figures are ammunition for the ILEA, under threat of rate-capping by the Government, to argue that inner London needs increased spending to keep pace with the increasing levels of deprivation.

Mrs Morrell said she intends the report to highlight the facts on deprivation in London.

"Firstly I want to confront the Government with the true facts of life for children in the capital city. Secondly, I want to seek the support of everyone in a crusade to get the Government to boost its spending on all services needed by children in inner London."

The educational priority index weights schools according to social factors likely to indicate disadvantage - such as entitlement to school meals; size of family and fluency in English. Data was collected on 91,177 primary and secondary pupils.

The two key factors are parental unemployment and fluency in English.

Children in Need is available from the ILEA.

Coping with many cultures

The Mulberry comprehensive school for girls is to be found on the doorstep of the network of narrow streets in Stepney, east London, that house the workshops and warehouses of the rag trade.

Its pupils reflect the local Bengali community, but the school also has Chinese and Vietnamese children.

Mrs Daphne Gould became the head of Mulberry only a few years after it was built in the 1960s. She says 17 nationalities and 17 languages are represented in the school.

The families at her school face problems not only of unemployment, but also of bad housing and the stress of large families. Children moved out of Tower Hamlets into temporary hotel accommodation will travel miles each day to stay at the school.

"This is the stable part of their life. Here there are people who take account of their problems and listen to them," she says.

Mrs Gould is justly proud of her bright school - vivid jungle murals cover the walls - and the school has an exam record that does it credit.

There are 900 pupils, with 100 in the sixth-form. Almost 80 per cent of the pupils are entitled to free school meals and three-quarters of the pupils don't speak English at home. The largest group are the children of Bangladeshi parents.

Resources are vital to allow children to take part in school journeys and see productions of set books.

"The annual two-week holiday that children used to have is a thing of the past, so it is important our children can go away."

In the first three years the children are taught in mixed ability classes and there is a great emphasis on individual teaching and accurate monitoring of each child's progress.

"A great deal of additional work is put in by the teachers. The true ability of children from such backgrounds is often hidden."

The school maintains close links with parents, and teachers will help parents with legal advice and assist in letters that have to be written.

Mrs Gould estimates that the number of pupils entitled to free school meals has more than doubled in the past three years. Many families in the area have been hit by the decline in textiles and clothing manufacturing.

"The practical implications of poverty for schools is that they have to have extra resources. With a hard-working staff we can and do cope very well."



Almost 80 per cent of Mulberry pupils are entitled to free school meals.



Mulberry has an exam record that does it credit.

Picture: Judith Pearson

Teacher asks for review

Mr Kantimay Kumar, a teacher who was sacked by the London borough of Newham four years ago, has been granted leave in the High Court to apply for a judicial review of Newham's decision not to reinstate him, rather than his decision to dismiss him, as stated in *The TES* (February 22).

Mr Justice Hodgson also granted leave for a judicial review of the position of the Department of Education in the case, two years ago a High Court judge ordered the DES to review its decision to fall Mr Kumar's probationary period but the department has so far failed to do so, stating that there is no existing regulation under which it can be reviewed.

Mr Kumar is seeking damages from the DES as well as from Newham.

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TEACHER APPRAISAL

Law may back national system - DES

Bert Lodge reports from the Industrial Society's conference on staff assessment

Heads could find themselves being assessed by their own governors sitting with retired heads and local authority advisers, the Permanent Secretary at the DES suggested this week.

Mr David Hancock was speaking at a London conference on staff appraisal organized by the Industrial Society. His speech was of major importance as the first comprehensive statement on how the department sees teacher assessment working since Sir Keith Joseph, Education Secretary, introduced two years ago he was determined to introduce it.

Mr Hancock confirmed Sir Keith's readiness - revealed at the North of England conference at Chester in January - to impose a national system of teacher assessment by legislation if teacher unions and employers failed to agree on one. It would be based on teachers being observed at work, with other factors taken into account, he told 250 of the country's senior educationists.

He also made it clear that the department expects appraisal to be taken up by colleges of further and higher education.

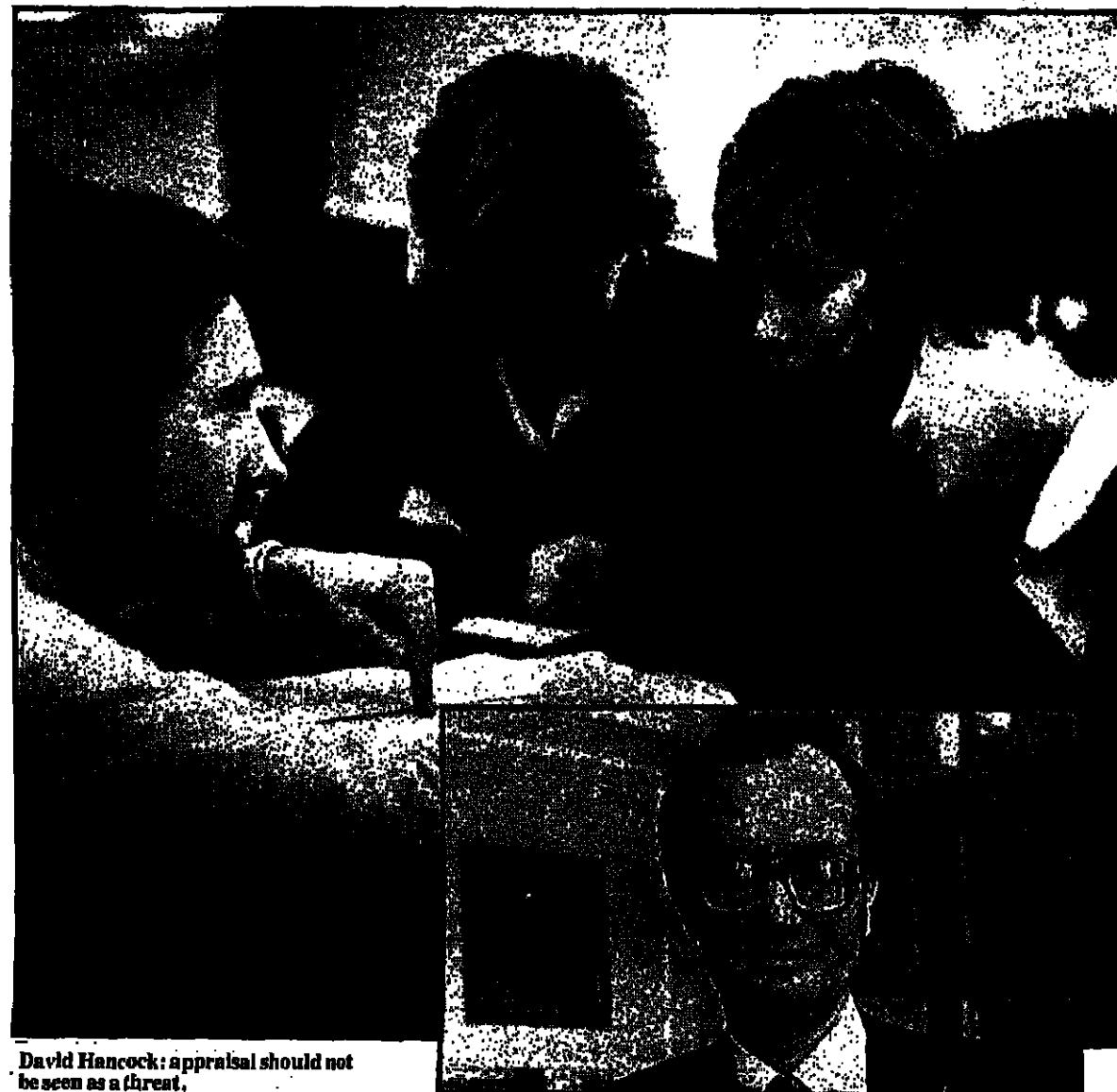
He made no mention of pay increases depending on satisfactory assessment, a proposal made by the local authorities last November and one of the principal reasons for the National Union of Teachers' withdrawal from salary restructuring talks.

Mr Hancock reiterated the Government view that outstanding teachers should be paid extra. This is presumably a reference to the teacher fellowships proposed by the employers where teachers found to be particularly good would receive a cash bonus, and a sabbatical leave.

Outlining the way an appraisal system for established teachers might be organized, Mr Hancock said it would be up to the chief education officer and his colleagues to see that the arrangements were workable and consistently applied between institutions.

For the most part, the actual assessments would be the responsibility of the profession itself. One element would need to be a system in which each level of senior teacher would assess colleagues accountable to them, with the next senior level monitoring those initial assessments, and the headteacher able to add further comments. But I am also sympathetic to the case for independent checks as a precaution against unfairness and to ensure a comprehensive picture.

"In any case, the system I have described could not be directly applied in small schools or to headteachers. The CEO and his professional advisers would need to devise arrangements to apply to them."



David Hancock: appraisal should not be seen as a threat.

One idea that I have heard, and which I suggest has merit, is the creation of a cadre of headteacher assessors drawn from, say, recently retired heads, local authority advisers or inspectors and recently retired HMI. Another is to involve governors of schools in some way. These and other ideas need to be examined."

While refuting the allegation that the Secretary of State was primarily concerned with getting rid of weak teachers, Mr Hancock confirmed that assessment could lead to this if a teacher was found to be sub-standard and did not improve even after additional support and in-service training. "In the last resort, staff whose performance cannot be restored to a satisfactory standard ought to be dismissed. The burden of an incommensurate weight has proved to be irremediable frequently overlooked."

But appraisal should not be seen as a threat, Mr Hancock emphasized. Rather was it a series of opportunities:

- The opportunity for the teacher to discover how his or her performance was perceived by management. For many successful and hardworking teachers this could be the only opportunity for giving praise where it was due;
- The opportunity to register difficulties beyond the individual teacher's control;
- The opportunity to share professional problems and seek solutions with experienced help;
- The opportunity to plan ahead and consider the individual teacher's career development needs; and
- The opportunity to help the school or college to improve standards by setting goals to which each member of staff is committed and towards which each is prepared to define his own contribution.

"This is the type of appraisal system that the Department wants - one that is constructive, supportive and developmental."

Mr Hancock acknowledged that the prospect of being appraised had aroused certain anxieties among teachers. Among these were:

- Assessment would impose a single, restrictive view of education, encouraging conformity and suppressing initiative. "I don't believe it. I have yet to go into a school where the head teacher has praised an outstandingly dull, safe, conformist teacher."
- Business logic cannot be applied to schools because they don't operate like Marks and Spencer. "No one I know has ever suggested that a school should be run exactly like a business. The idea of appraisal is to identify the qualities that make a good teacher. I have seen it suggested that teachers in run-down inner-city schools would suffer at the expense of their counterparts in schools with more prosperous catchment areas. This suggests that headteachers and local authorities are unaware of the special problems of the inner city school. It is no accident that names of headteachers of inner city schools regularly feature in the

honours list."

- No one else can know what happens in a classroom. "In one sense this is obviously true. But the progress of a class is observable by others. Involvement and enthusiasm are readily noticed."
- Assessment will be costly in time and paper and generate an educational bureaucracy. "I do not deny that appraisal systems require time and effort. But other professions have found the effort to be worthwhile."

The assertion that appraisal had been tried elsewhere and had not worked was simply not true, Mr Hancock said. Some overseas practice was very impressive. In Rhineland Westphalia, for instance, applicants for headships were appraised not only for their own performance but also for their appraisals of other teachers.

Doubts about assessment were never against the principle but were practical ones. Who would do it? How often? Who would assess the assessors? What would the findings be used for? Yet in the case of new entrants to teaching a Burnham joint structure working party had already looked at these same questions and come up with a set of answers.

He regretted that the teacher unions had declined to cooperate in some research in Birmingham and Suffolk designed to find the answers to similar questions regarding established teachers. Yet he stressed that the teacher unions had never been hostile to appraisal itself.

"I welcome the fact that the NUT has recently proposed talks involving the Department, the local authorities and the other teacher unions about assessment."

In other professions it was long accepted, Mr Hancock reminded his audience, even though measurable outputs might be difficult to identify. Civil servants involved in policy groups were appraised. HMI inspectors frequently worked on their own away from colleagues but they were appraised like the rest of the DES.

"And I would remind you that HMI are recruited from the ranks of experienced teachers and they have accepted appraisal as appropriate to the management of their profession."

Scientists working in research councils at the frontiers of knowledge are appraised. It is difficult to envisage work more creative than that. So why not teachers?

Regular appraisal was vital for teachers to get better results in schools, Miss Julia Cleverdon, director of Education for the Industrial Society, told the conference.

But the Government needed to consult on assessment and should not impose an inflexible and unpopular system.

Miss Cleverdon, a member of the Schools Curriculum Development Committee, said: "Appraisal should now become an important way of realizing the potential of people in education."

honours list."

As a leader on management courses, David Trethowan has been disturbed, even disgusted, some fellow professionals with his readiness to delve into the world of industrial management and come out brandishing worthwhile findings. His critics say running a school is *not* generally and that one cannot import management techniques from any old firm.

Actually, David Trethowan has said the same - that only some practices could usefully be adapted from industry - but his critics never seem to read that far.

He has written, rather sensationally: "Most workers, including teachers, can hold down a job using 20-30 per cent of their ability. That leaves 70-80 per cent of a teacher's talent open to be affected by positive motivational factors."

Or in other words, "Give 'em something to go for."

At IBM, the giant computer firm, the practice is well-established. It is called "target setting". The term can be faintly disturbing when sprung upon the unwary.

Steve Pennington, head of geography, admits to having found the idea formidable when he joined the staff of Warden Park five years ago. So did Mike Pountney, head of science, who arrived a year earlier. But Sue Elvin, only just out of her probation and fresh from her annual "target revision" interview with the head that morning, was unperturbed although one of her targets had been to take a class through an O level English exam ("We don't shield probationers here," David Smith, one of three deputy heads, admitted).

Some of the targets are positively homely, like taking over department stock or organizing the buses, morning and afternoon. Others are nakedly businesslike and mathematically measurable like getting so many of such and such a year through a public exam.

But at least the staff seem agreed that the targets are not handed down. "I would never work towards an unagreed target," Steve Pennington asserted.

That ought to be reassuring for the five staff in his department because targets are initially arrived at for the following year after discussion between the teacher and his department head early in the summer term.

Towards the end of the term each department head has a meeting with

David Trethowan, head of Warden Park School, Haywards Heath, has been a scheme for appraising his staff for the past nine years. He is an enthusiast for appraisal. Yet he says of the employers' published proposals: "They could hardly have been presented in a worse way."

As a leader on management courses, David Trethowan has been disturbed, even disgusted, some fellow professionals with his readiness to delve into the world of industrial management and come out brandishing worthwhile findings. His critics say running a school is *not* generally and that one cannot import management techniques from any old firm.

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Bert Lodge on a business-minded head who believes in giving his staff something to aim at

More targets than an archery range

exam.

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the head and the department and its targets are scrutinized. Then from September onwards, every teacher has a "How are you getting on with your targets?" interview with the head.

It's difficult to believe there is not at least one sceptic among the dozen or so who spoke to *The TES*.

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Some of the targets are positively homely, like taking over department stock or organizing the buses, morning and afternoon. Others are nakedly businesslike and mathematically measurable like getting so many of such and such a year through a public exam.

"I don't think anybody feels threatened by the system," said Mrs Maureen Preston, head of maths. And she probably spoke for very many when she added: "I need a challenge every year."

Ms Hazel Ellerby, a civil servant turned languages teacher, confirmed: "It's not at all oppressive. I see it as a means of communication."

Most of the staff, however, are dubious about the management proposals - except Ms Kim Brown, who did not object to assessment being linked to pay. David Smith did: "I can see a lot of heads not wanting to rock the boat."

Then he added with touching corporate loyalty: "But nobody here would be worried about not getting their next increment."

Mike Pountney too, who has spent some time studying the employers' plan, agreed to a certain extent with linking assessment to pay. But the assessor would have to be somebody he respected who had been well trained. John Trevett, head of English, could not see how it would work. "I can't envisage a situation where I would be saying: 'Your performance has not come up to standard.' If such a

situation arose, I would feel partly responsible. The real problem goes back much earlier in a teacher's career. How did they get into the profession?"

Mrs Rowena Carr, who was to learn that day how near she had got to her target of organizing successfully a residential study trip, said: "Linked to pay? It frightens me. You are going to feel threatened. We have a better system here." But she was more receptive to the proposals for a three-year probation. "My probationary year was a nightmare."

John Fielder, head of music and nine years at Warden Park (his first job thought the three-year probation proposal was disgraceful. Echoing David Smith, he added: "David Trethowan makes no concessions for probationers. But they do get a lot of help here. There is a tremendous back-up, a safety-net system."

One item in the package of new proposals won a fair measure of approval: a term's sabbatical, though not necessarily as part of the fellowship scheme where outstanding teachers get not only three months' leave but £1,000 a year for the next three years.



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Steve Pennington's answer to that question was: "Whether you would get the same commitment in the inner-city schools where they have many other problems I don't know."

David Trethowan is not worried that target-setting might not travel. He is more concerned that something resembling the management's appraisal system might get there first.

"If those proposals are only a means of allocating salaries then there are dangers in a none-too-well-paid profession of using salary as a motivator. If it is to punish the poor performer then we run the risk of others limiting their performance to do just enough to pass. If it is to improve staff performance then developing the performance of every teacher in the school must be the target and not merely weeding out poor performance."

"With the proposals as they stand, we will effectively pay a high rate to teachers to be good and hope to deter the small percentage who are below standard. But having reached the Professional Grade how will the system motivate the majority? For that is how I see my job - to motivate staff."

TEACHER APPRAISAL

Steve Pennington asked: "Is the sabbatical just the icing we should have anyway? You can't get secondment, in-service training has to be in your own time. It's a camouflage over the real issues."

John Trevett was attracted to the sabbatical but not the idea of a cash prize. Rowena Carr thought fellowships elitist while Kim Brown conceded that while they might be an incentive to some they could cause bitterness in the staffroom. Hazel Ellerby said the idea smacked too much of industry. Mike Pountney thought there was a good case for some time off every five or six years.

But no approval was so unqualified as that expressed for target-setting. Yet from the tone of the school, the atmosphere of industry and application encountered when entering a classroom unannounced, any system - or none - would succeed there. Could target setting flourish in a very different institution?

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The Cadbury's National Exhibition of Children's Art now entering its 38th year is once again looking for talented young artists' work to display.

The best art and craftwork will be shown at six major galleries around Britain next year and each child whose work is selected for exhibition will receive a certificate (in the 1984 exhibition more than 800 works were selected).

Awards totalling over £12,000 can be made to pupils and schools at the judges' discretion, covering art, craft and poetry. In addition, the Cadbury Italian Art Tour can be won by up to six of the most talented children. A distinguished panel of judges headed by Dr. Harold Riley will select work from four age groups, ranging from under 7 to 18th birthday.

The closing date for entries is 20th April 1985. Please complete the entry form below and ensure that each painting or craftwork bears a signed statement by a teacher or parent that the work is original and unaided. This should be written on the back of the painting or adhered to, tied to or enclosed with each craft entry.

For full rules and conditions of entry, if required, please send an SAE (22cm x 15cm or larger) to: Cadbury's National Exhibition of Children's Art, Granby, School Lane, Dunham Massey, Altrincham, Cheshire WA14 5SZ.

Cadbury's National Exhibition of Children's Art 1985		This coupon must be completed and sent with entry to Cadbury's National Exhibition of Children's Art. All art or craft for which awards are made become the property of Cadbury Ltd. Work not accepted will not be returned without written request sent with entry with postal order or cheque to cover cost of return. Works not accompanied by signed statement (see above) cannot be accepted for entry.	
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Full Postal Address		NO	CERT
Tel. No.		POSTAGE	
Total Number of entries			
7 years and under	8-11		
12-14	Over 15-under 18		

Cadbury's National Exhibition of Children's Art 1985

CLOSING DATE FOR ENTRIES: 20th APRIL 1985

MARY GLASGOW TEACHER FELLOWSHIP 1986

Applications are invited for the Mary Glasgow Teacher Fellowship, 1986. The fellowship provides for three months sabbatical attachment on full salary at the Language Teaching Centre, University of York, to permit the teacher fellow to pursue and/or complete a project in the field of language teaching/learning. Details of project, dates of attachment etc. to be agreed between the applicant, the Trustees and the University. Help will be given with accommodation, displacement costs, research facilities etc. Preference will be given to foreign language teachers with not less than 5 years successful classroom experience in schools. Further information and application forms (to be returned not later than 31st March 1985) may be obtained by sending stamped addressed envelope to: J.P. Carpenter, Hon Secretary Mary Glasgow Language Trust Ltd, Seymour Mews House, Seymour Mews, London W1H 9RB.

(2026)

Too many cosy talks and not enough inquiries

No appraisal scheme for teachers could have credibility if at the end of the day pupils failed to reach the standards the school set for them. Mr Donald Naimith, chief education officer for Croydon, told the conference.

In his authority, targets have been set which included what children should know and be able to do at various stages. In particular, in the key areas of language and number, pupils were assessed at seven, 11 and, to some extent, at 14, and it had seemed that all teachers bore a collective responsibility for standards in these areas.

"But it would be wrong to pretend that the child's opportunities and performance are not related to the capacity of his teacher and that this relationship was assessed at seven, 11 and, to some extent, at 14, and it had seemed that all teachers bore a collective responsibility for standards in these areas."

Mr Naimith said that there was no reference to appraisal scheme - therefore had to include this indispensable element

"namely, acceptance by the individual teacher of the degree to which it is reasonable to expect him or her to contribute to the achievement of the learning and teaching aims which have been set, whether in terms of offer by the school or attainment by the pupil."

"I agree that such an acceptance will need to be negotiated individually and regularly and that this will not be easy - it will, for example, need to take into account all prevailing circumstances and to be validated by independent sources."

Afterwards, Mr Naimith said he feared that some of the many appraisal systems being developed would amount to no more than a cosy talk about "what we feel we are doing without an inquiry into why did that particular class fail."

It was one of the weaknesses of the 1944 Act that there was no reference to the special and quality of headteachers offered in schools.

Lectures

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Schools may be cut from practice list

Some Kent schools may have to be dropped from the list of practice schools used by students of Christ Church College, Canterbury, according to a report by HM Inspectors.

The inspectors found that professional studies at the college were not dealt with adequately in some areas of the primary curriculum and they suggest the practice of BED fourth-year students being taught alongside third or even second-year BA/BSc undergraduates should be revised.

Overall academic qualifications of staff are good and primary expertise has been strengthened by the appointment of 14 tutors direct from schools in

the last few years.

The college, founded by the Church of England in 1972, has excellent relationships with the local education authority and teachers generally. Considerable consultation takes place between college tutors and the schools where students spend an introductory week before starting their practice.

"Despite all these attempts to prepare schools to receive students", says the report, "there is some evidence of conflict between what the students are trained to do in college and what some are asked to do by individual teachers in schools."

"Where such problems are identified by tutors and where they cannot be resolved, the college will need to consider whether it is appropriate to continue to involve these schools in practical training of the students."

On the BED course the inspectors question the balance and emphasis of the range of professional studies, particularly in mathematics, art and craft, and movement. They also criticize leaving the place of history and geography in the primary curriculum until the third year.

The report does say, however, that these issues have already been considered by the college and action is being taken on all of them.

During inspectors' visits last year teaching styles observed were generally appropriate. "There were examples of challenging lead lectures and lively seminar groups where students took the lead."

The students also showed considerable commitment to their training and generally performed competently in the classroom.

"Some written work showed perception and an ability to relate theory to practice. In other cases, students had relied too heavily on dictated notes or course outlines, and some project work needed a more analytical approach."

12-point plan to improve department

A 12-point improvement plan for the department of accountancy and business at Slough college of further education has been put forward by HM Inspectors.

They say the department's original two separate entities and its traditional approach to teaching point to the need for a number of changes.

They call for new arrangements for course leadership, administration and evaluation; a review of liaison with employers and professional bodies; and re-evaluation of the Association of Certified Accountants (ACCA) position in terms of student workload, curriculum design and course requirements.

The inspectors are also concerned about the information technology content in syllabuses and the initial counselling of students. They say and should consider adopting a more student-centred learning strategy.

However, on most courses inspected - including those in the department of accountancy and business - examination results were average or above average.

The inspection, which also covered the college's management centre, staff and physical resources was good and were applied to an appropriate range of well-motivated student body.

Provision within the management centre was generally sound, with several models of good practice. At there were some examples of high stimulating teaching in both departments.

A report on hotel reception courses at 14 colleges of further education, concluded that few colleges had given sufficient consideration to enterprise curriculum development, related to City and Guilds of London Institute guidelines.

Explicit aims and objectives had been prepared in under half the colleges visited. Cases were also noted where significant deviations from CGLI recommendations had evolved to the detriment of the course.

For example, some colleges had failed to allow enough time to certain subjects and in several cases, salesmanship and computing were neglected.

Although schemes of work had been prepared in all but one of the colleges, many of these were "little more than rudimentary statements of intent."

Some did not cover the topics recommended by CGLI and others had been written to accommodate the exam syllabus.

On teaching style, inspectors noted "dictated notes and the mechanical completion of set exercises or past examination questions."

On industrial placement, the inspectors noted that the student's work was largely done on the employer. They received no other than meals on duty and needed accommodation. Some students received travelling expenses but not all. One student worked in the hotel kitchen throughout the placement.

Wide ranging difficulty

Providing a wide age and ability range was the main difficulty at primary school, Church of England, primary school, near Chesham.

Inspectors suggest that staff should provide their own work schemes based on experience and the country's needs. But they say that relationships are excellent in the 45-pupil, two-year school and children read well and achieve reasonable standards in mathematics.

Numbers have also created problems for Bawburgh first school, Cranleigh, Surrey, which has grown from 10 children in 1981 to 277 last September. The report says it offers children stimulating and challenging work.

HMI reports

HMI reports are available free of charge from the Department of Education and Science, Publications Despatch Centre, Honeypot Lane, Stanmore, Middlesex HA7 1AZ. Also available from L.E.A.s.



Holloway - overcrowded and loss of education facilities.

Prison classes cancelled due to staff shortages

Holloway, one of Britain's largest prisons for women, is overcrowded, short of staff, and has lost some of its education facilities.

A recent report, published by the Department of Education and based on inspection of the prison's education department by HM Inspectors, says the educational facilities are a contradiction of the spirit of prison rules.

Holloway is currently undergoing a major rebuilding programme with an eventual target population by 1987 of 350, compared with the present certified normal accommodation of 260.

But during one day of the inspection, 346 women were found in the prison. "During the period of the inspection, some 20 women were locked out and contained in police cells. The number has been as high as 58," the report says.

Inspectors were also told by the governor that the prison was understaffed by at least 30 prison officers below authorized levels.

The report says that whatever the justification for the policy shift, it appeared to have been accompanied by a reduction in how education, training and library facilities were valued.

"If this is correct, it cannot be good for the prison," the report says. "The education department, the report says, has been reduced in size and its facilities have been cut."

Mr Stephen Benn, the Inner London Education Authority member responsible for prison education, and Mr Neil Fletcher, further and joint higher education chairman, said in a joint statement: "It is a tragedy that, in the police, attitudes and actions have been so different."

They were told that during the inspection, the prison was understaffed by at least 30 prison officers below authorized levels.

The report says that whatever the justification for the policy shift, it appeared to have been accompanied by a reduction in how education, training and library facilities were valued.

Young jobless are well taught

Unemployed teenagers are well taught at Childwall Hall College of Education, but the college library and science laboratories are inadequate, says HM Inspectorate.

Its report is one of a series on the contribution of some of the Liverpool colleges to non-advanced further education in the city and looks at courses for 16 to 19-year-olds who are not employed.

The college caters for students from an area where unemployment is creating major social problems, and offers a range of courses, predominantly second-

retary and business.

While the inspectors found teaching to be sound, facilities are poor. Some classrooms are poorly lit and cold in winter. The two laboratories need re-wiring and library provision is inadequate.

In addition, expenditure on equipment and consumable materials is "barely adequate to maintain standards of provision."

The report expresses concern that almost half the students that take O level courses fail to finish, and it suggests there should be more careful

selection of students supported by a more effective tutorial system.

As students leave courses during the year, the college accommodation is not re-allocated to reduce overcrowding.

The college could make more effective use of space by designating specialist rooms for such subjects as maths and English, say inspectors.

Courses are co-ordinated and planned well but there was a need to develop a more systematic approach to the teaching and assessment of spoken English.

Sound curriculum turned into sound teaching

The main strengths of the Tuckwell School, Wrexham, Dorset, outweigh its weaknesses, say HM Inspectors.

The main problem was with accommodation. The grounds were spacious but there were several mobile classrooms, some of which were in such a poor condition as to be unsuitable as learning environments.

For the most part sound curriculum policy was translated into sound classroom practice. The inspectors suggest, however, that the school should now devise systems which encourage cross-curricular links.

Teachers at Aspull High School, Wigan are said to need in-service training to help them in providing community education.

The school was designated for community use in 1982, but inspectors say there is no management committee to develop the work. It is coordinated by one of the deputy heads and the parent teacher association is described as a community association.

There was no policy for replacing absent teachers on community education courses.

tion classes and the pace was "generally slow" and lacked rigour, say inspectors. Some teachers found it hard to adjust to teaching junior pupils attending on a voluntary basis.

The report says standards of work for the full-time pupils at the school are satisfactory within the rather narrow range of work undertaken. Staff devoted considerable efforts to the general welfare of pupils and pupil-teacher relationships were "excellent."

A plan by Thornhill middle school, Southampton to review its work in integrated studies, religious education, music and physical education was endorsed by inspectors.

They say there was no clear definition of integrated studies in the curriculum guidelines or teachers' forecasts of work. For instance, science work on bridges and boats could have been included. In some classes, history was "very weak indeed."

But standards overall were good in most subjects and excellent in written language, science and art and craft.

14-18 PRE-VOCATIONAL EDUCATION

This 2-page report, first published in The Times Educational Supplement on January 11, explores the range of courses on offer.

The feature includes reports on TVEI, CPVE, the CGLI pre-vocational courses certificates and the BTEC General Awards in Business Studies.

Reprints are available, price 25p, from Lesley Griffiths, The Times Supplements, Priory House, St John's Lane, London EC1M 4BX.

Please make cheques/postal orders payable to The Times Educational Supplement.

In his first interview with a foreign correspondent, William J Bennett, the new US Secretary for Education, calls for good teachers to be rewarded and bad teachers to be paid nothing at all. Bill Norris reports.

Trying to bring back that old time respect



William J Bennett

that it would be hard to define the good teachers - their colleagues, he said, knew exactly who they were.

On the issue of teachers' unions, Dr Bennett was ambivalent. "The teacher unions, the NEA and the AFT, are so much a part of our lives," he said cautiously. "I think it is certainly a mixed blessing. No one denies the effectiveness of the labour movement in this country in general terms of providing better circumstances for the working people of America."

But in some cases it has contributed to the diminution of professionalism and self esteem. "I think it is a mistake to believe that the 'new renaissance' in American education which has been his theme since taking office, Dr Bennett said: "I don't propose to achieve it. I hope to get out of the way and let the American people achieve it. I think the

American people can achieve these reforms themselves. We should be their ally, neither carping nor inhibiting their progress."

Dr Bennett said he was more confident of the prospects for reform at high school level than he was in higher education. "The heat is on," he said. "The American people are about the business of reform, and they say 'these schools are ours and we will make them better'. But there is an enormous degree of defiance given to people in higher education. So the American citizen says, 'well, maybe colleges should be better, but I am not sure I should be the one telling them. That is both good and bad... there is not much point in bringing about all this reform in schools unless we also bring reform in colleges."

Dr Bennett, who has been frequent-

Education institutions are like American restaurants - ranging from the very good to the unmentionable - William J Bennett

UK fears grow as EEC bans discrimination in training

Anne Good on how a Euro Court ruling could shake up education policy

A recent judgement by the European Court of Justice could have far-reaching effects on EEC education policy.

The Court said that governments must not discriminate against students from other EEC member states in vocational training and then defined this term so widely as to include almost all education, as well as what has traditionally been regarded as training.

Member governments now fear this could have serious immediate effects on their treatment of EEC students in areas such as access to courses, grants and student facilities.

The DES will be mainly concerned with the practical results of the decision, a Brussels-based British Government official said. The Court's very broad definition of vocational training could have major impact on, for example, access to courses in the UK.

"Potentially a tremendous number of courses could be opened to anyone who came along," he said. The judgement may also affect the rules applied by I.C.E.s in giving maintenance grants if these could be seen to discriminate against EEC students.

The judgement arose from a case taken by a French student against the Belgian Government. She challenged the rule whereby foreign students have to pay fees to attend courses which are free for Belgians, since the Treaty of

Rome bans discrimination on the grounds of nationality. The European Court last month upheld her argument, saying that vocational training came under the Treaty ban. The court then went on to define what it meant by vocational training.

"All forms of training which prepare for a professional qualification, trade or specific job or which develop the particular aptitudes necessary to exercise such a profession, trade or job are part of the vocational training, regardless of the age or level of education of the pupils or students and even if the course includes some elements of general education."

Almost all education, including higher education, would come within this definition of vocational training. Therefore, as a result of the judgement, education should be subject to the same Treaty guarantees as are applied to training (such as the ban on discrimination against nationals from other member states) and could be more confidently included in EEC policy-making than has been possible in the past.

These are the very developments feared, and opposed by the UK Government, along with the Danes. During the court case both member states intervened in support of the Belgians, arguing that the case raised "problems of principle" which go far beyond the particular issue of fees for foreign students in Belgium.

The UK Government said it believed that the Treaty of Rome "does not forbid a member state to treat its citizens more favourably in education, especially as regards access, scholarships and study grants, other social

facilities given to students and students' participations in teaching costs".

The European Court rejected this argument, saying that vocational training (including education) is so far as it fits the Court's definition) comes within the scope of the Treaty.

The Court also pointed out that, while the Treaty did not specifically place education policy in the hands of the EEC institutions, vocational training is part of the community's responsibilities. When member states signed the Treaty they agreed that the EEC should set up a "common vocational educational policy". The Court considers this policy an important aspect of achieving such aims as free circulation of people and improvement of workers' living standards.

EEC involvement in training policy, best known in the form of the European Social Fund (ESF), has been uncontested by the member states, because a fairly restrictive notion of vocational training was used. In fact, the European Commission has avoided over definition of the term, believing that if it asked the Council of Ministers to set limits, there would be strife, than the Commission would like.

The Commission has also been trying to gradually expand the field of EEC involvement in education despite total opposition by some governments, in particular the Danes, to any community policy-making on education. So, for example, the Commission officials believed that progress was made at the EEC Council last June when ministers agreed to joint actions on foreign language teaching, literacy, new technologies in education and migrant children. But without a firm base in the Treaty of Rome, Commission proposals for more fundamental EEC education policy could not withstand member states' opposition and even agreed initiatives were not backed by major funding.

With the Court decision, the way is now open for the "wider implications" to be explored and "exploited", a Commission official said. The possible range from increased financial backing for existing community education activities, such as grants for exchanges of staff and students between higher education institutions in the member states, to developing new policy areas such as applying equal treatment laws to girls in schools and colleges.

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OVERSEAS

Strike wounds remain unhealed

Union representatives are more content than their counterparts with the outcome of last spring's strike by Finnish teachers.

A survey commissioned by the OAJ (National Union of Teachers) suggests that 52 per cent of teachers are unhappy about the terms of the agreement that ended the strike as the first concerted action of its kind to be staged in Finland. But 65 per cent of their representatives are satisfied.

The month-long strike involved 9,000 of the OAJ's 45,000 members and led to 150,000 comprehensive school pupils being sent home. The OAJ accepted a formula that helped senior teachers whose salaries have been lagging behind. But most of the

benefits, partly offset by some extra classroom duties, were deferred until the latter part of a three-year deal.

Judging by the responses of 697 teachers and 117 union representatives the most disenchanted OAJ members were in the comprehensive grades around which the strike principally revolved.

Commenting on the survey's findings, the OAJ's journal says: "Union officials have obviously responded in terms of the objectives set by the OAJ, the rank and file in those of personal expectations... that comprehensive school teachers are not entirely satisfied with the results is understandable because members pitch their expecta-

FINLAND

As British teachers embark on industrial action, Donald Fields reports on an inquest into last year's strike by their Finnish counterparts.

tions high when they resort to strike action.

Surprisingly teachers who actually participated in the strike are substantially more pleased with the result than those in unaffected areas. Less surprising is the finding that the proportion of

union representatives believing the OAJ organized the strike "very well" (60 per cent) is more than double that of teachers sharing this opinion (28 per cent).

On the other hand, only 15 per cent of teachers - and 1 per cent of union officials - fail to give any credit to the union. Again, it was teachers in areas hit by the strike who were most positive about the union.

Sixty-three per cent of teachers thought the strike was called off at a suitable juncture, against 28 per cent who believed it should have been extended. The latter view was more prevalent in strike areas than outside them. Ninety-three per cent of union officials endorsed the OAJ's timing.

Countries share study to see how they differ

A joint research project has been set up between a British and a French university to establish how conceptions of professional responsibility differ for between teachers in the two countries.

The project is shared by the University of Bristol School of Education and the University of Provence. Funded by a £36,000 grant from the Economic and Social Research Council, the project will continue until March 1987.

An earlier study of accountability in England and France, highlighted significant differences in teachers' approaches to classroom practice. The new research will investigate these differences, and establish the extent of autonomy allowed by the two systems.

Teachers will also be asked to explain their responsibilities to pupils, fellow teachers, parents and administrators and research will be conducted in three stages.

The team is already engaged in submitting questionnaires to 400 primary school teachers in Avon and Provence. This will be followed by interviewing a selected group of teachers and observing them at work. Follow-up discussions will be held to establish how teachers' perspectives are influenced by organizational structures as well as national traditions.

The earlier study of accountability carried out in Devon and Calvados in France, revealed that despite being part of a centralized system, teachers in France often enjoy more freedom from external pressures than their English counterparts. This is largely because the French are protected by their civil service status.

However, the indications are that similarity between the two systems is growing. The traditional classification of the French system as centralized is regarded as simplistic. Both, for example, are facing economic stringency, a lowering of teachers' morale, and an increase in bureaucratic corporate management.

The first study also raised an important question - the extent to which accountability is reciprocal. In the classroom, this is so. French teachers are assessed in terms of teaching method, while teachers in England are evaluated on results.

But a warning was given: "At the bureaucratic and political heart of each system lies the power to control without in turn being controlled - the only stage in the system without a reciprocal accountable relationship."

Iola Smith

Religious order agrees to appoint heads from the laity

IRISH REPUBLIC

The country's biggest Roman Catholic teaching order - the Irish Christian Brothers - is shortly to break with a 183 year old tradition by appointing lay teachers as headmasters of its schools.

About half of the country's secondary schools are run by Catholic teaching orders and nearly all have religious headteachers.

The lay teachers' union - the Association of Secondary Teachers, Ireland - has been campaigning for years for its members to be given leave to apply for headships.

Initially, five lay heads will be appointed - possibly as early as next September. Other lay appointments will follow next year.

A spokesman for the order, which runs 80 secondary schools, said the decision was taken for a number of reasons, including the decline in religious vocations. Lay teachers outnumber religious by five to one in private secondary schools.

The appointment of lay headmasters is not the only change for the Brothers who traditionally were associated with firm discipline, a nationalistic outlook and "boys only" schools.

Recently, it was announced that the Brothers are to become associated with at least four co-educational secondary schools.

And the Brothers' association with the nicks and the strap came to a sudden end when corporal punishment was banned in Irish schools three years ago. Now the Brothers are among the greatest advocates of other forms of less severe discipline.

John Walsh Christian Brothers... break with tradition



More unrest

Continuing violence in South African schools has brought education to a standstill for tens of thousands of pupils. An estimated 8,000 youngsters are now boycotting classes.

Police who continue to fire birdshot and teargas at protesting pupils, recently detained three student leaders after swooping on their homes in Atteridgeville - a black township near Pretoria where the boycotts began last year.

The boycotts have followed the detention of black youngsters last year.

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Japan warns it may quit UNESCO

Japan has become the latest country to threaten to withdraw from the United Nations Educational, Scientific and Cultural Organization unless reforms are introduced by the end of the year.

The threat was made by Mr Takasaki Kagawa, Japan's delegate at a special five-day session of UNESCO's 50-member executive board in Paris.

Mr Kagawa said the Japanese Government was dissatisfied with UNESCO's efforts to reform itself.

As UNESCO's second largest contributor, paying 13.5 per cent of the US\$391 million annual budget (the Soviet Union is the largest, contributing 15 per cent) Japan's withdrawal would throw the organization's already severely reduced finances into considerable disarray.

Salaries increase

The Sri Lankan Ministry of Education has announced a salary increase for teachers, effective from January 1 this year, providing minimum increases ranging from Rs 100 (50) to Rs 240 (80) a month.

Why Australians are becoming self-conscious

AUSTRALIA

A drive to make Australian studies a major growth area in the country's schools, colleges and universities over the next four or five years is being planned by Senator Susan Ryan, the country's Minister for Education.

She has launched a \$1.3 million Federal Government project, the aim of which will be to review and upgrade Australian studies in time for the bicentenary of discovery by Europe in 1988.

The project involves the creation of a six-level committee which will look at the way Australian studies are taught in tertiary institutions, as well as a major review of curriculum materials used in primary and secondary schools.

The three-member tertiary committee will concentrate on the need for teacher education, the development of Australian studies as an academic discipline, and in promoting a greater understanding of Australian society by all tertiary students.

This committee will be chaired by

Dr Kay Daniels, a senior lecturer in history at Tasmanian University, and a highly-respected author of several pioneering works on the history of women in Australia. The other two members will be Mr Bruce Bennett, a senior lecturer in English at the University of Western Australia, and Mr Humphrey McQueen, author of a number of studies on Australian history and visual arts.

According to Senator Ryan, there have been several major developments in Australian studies over the past few years, partly as a result of increasing awareness in Australian achievements and culture.

She said that primary schools had in recent years attempted to give "our generation" a little knowledge about ourselves. But she added that in many cases, schools had tended to promote the worst kind of nationalism, mixed with racism, male chauvinism and militarism; they had looked at Australian history and culture from only one point of view - the view of the affluent, or the victor.

Luis Grole

Migrants' children

Common Market countries are failing to meet the needs of the children of migrant workers, the European Parliament's youth, culture, education, information and sport committee has been told.

A report placed before the committee said that children from fellow EEC states were not receiving special educational treatment - such as mother-tongue teaching - as was called for by an EEC directive eight years ago.

The EEC is now asking its member states to provide teacher training for this task and urging them to recruit more specially trained teachers from immigrants' countries of origin.

Richard Gamble

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Teaching methods overshadowed by politics

Sir - As the author of the original piece on Sandra Shmidt and the William Patten Infants' school (TES, February 1) which has caused such a response from both the "popular" press and the TES itself, I would like to comment on the reactions which I believe have

I chose to write about Ms Shmidt because I know parents of children at the school who speak very highly of it, and I had talked with her before the interview and heard how she runs the school. I chose to highlight her "political" ideas in my article because they are controversial and obviously relevant in view of the current debate.

However, I was at pains also to mention some of her interesting and

apparently, successful educational methods.

While it is, of course, in order for the former to be discussed publicly (although I would not call making up quotes and bartering parents outside the school gates, as some newspapers apparently did, discussion) it seems to me wrong that any other element of the school's behaviour was discarded, thus giving a totally unbalanced picture.

It also seems curious to me that while so many schools teach material which has an in-built right-wing bias and unashamedly support the present Government, Ms Shmidt is vilified for taking an opposite stand.

ANGELA NEUSTATTER
32 Highbury Place
London N5

Best interests

Sir - I was encouraged to see your interview with Sandra Shmidt, head of William Patten Infants' School. A school cannot divorce itself from the community which it serves and should not ignore political controversies which impinge on the lives of its pupils.

In taking up a deportation case affecting their pupils, the staff were acting in their best interests. To remain silent and "neutral" would have been to condone racist laws; to express sympathy but take no action would have been a cop-out.

In developing anti-racist teaching in my own classroom, I have found very young children are able to examine issues and come to conclusions of their own based on the evidence presented to them.

It is unclear when the Inner London Education Authority says that such discussions should be "balanced" whether they are saying that equal weight should be given to the racist arguments ("They're taking our jobs, they're going to swamp our culture") which underpin the Immigration and nationality laws. If that is the assumption, then the IEA cannot in truth call its policy "anti-racist" for it has to begin from a political/moral position opposed to racism.

It is not enough to feel sympathy "as

you would for the children of Ethiopia" as Norman Thomas suggested. In fact, on that issue schools usually suggest some action - for example, collections or pressure on the government to increase aid.

To merely encourage children to discuss their experience of racism, a painful process in itself, and to do nothing about it, is a gross misuse of the trust that they place in us. If the IEA's anti-racist policy is to go beyond mere rhetoric, then schools themselves must become part of the anti-racist struggle in their community.

If we wish to have a politically literate population, then schools should begin from early childhood to involve pupils in studying, debating and taking action on local, national and international issues. My pupils have studied issues ranging from racist graffiti on the local estate, through to the imprisonment of Nelson Mandela and the question of whether violent struggle against an unyielding, unjust system is justified.

Just one last thing: William Patten has the firm backing of its governors, parents and community. They are aware of what anti-racism means in the "real" world.

MARTIN FRANCIS
Normand Park Primary School
Little Road
Fulham
London SW6

One-sided view

Sir - I take Norman Thomas's point about involving children in demonstrations when they are not in a position to judge issues fully (TES, February 8), but his ideas about what "should be" brought to their attention need close examination, especially as he appears to think that he is outside of politics.

His statement "that children should be aware of the social difficulties of their compatriots, and they should be encouraged to be sympathetic towards them, as they would the starving children in Ethiopia" is as revealing as it is worrying. It seems to me that there has been no lack of sympathy for the victims of famine, and children have been very much involved in raising funds, through their schools, or television programmes such as *Blue Peter*. What they, and we, lack is the opportunity to understand the political and economic dimensions of the issues.

Sandra Shmidt is justly concerned that young children are shown only one side of a story from an early age. In this case black children are constantly portrayed as passive victims inherently unable to cope with their problems, and that they have nothing else to do but wait around for Western aid.

A few late night programmes have shown alternative images. *Black on Black*, for example, showed how the interests of the ruling group were met by using acres of productive land for cash crops in Kenya, but, nevertheless, many continued to work hard to cultivate food in extremely difficult circumstances. *First Tuesday* reporting from Ethiopia's Tigray Province gave first-hand evidence of groups of villagers discussing the organization of help for refugees who were passing through, and of a group of farmers who had succeeded in producing a sizeable harvest in spite of the low rainfall.

Norman Thomas explicitly makes a link between the children of Ethiopia and children in Britain, which suggests that while children view their black compatriots according to this model, Coard and others have repeatedly stressed that this is precisely what happens already with serious consequences for black children. It may be argued that young children will not understand political arguments, but it is clear that they recognize the one side continually presented to them.

The alternative images of achievement and esteem can also be presented by schools, which can at least make a start at countering those found daily in the media, at the same time combating, instead of reinforcing, racism.

JOHN TYRRELL
36 Acol Road
Handsworth Wood
Birmingham

Pay one's way

Sir - Ted Wragg upbraids Sir Keith Joseph for his "market" view of maintained education (TES, February 15), whereby the amount contributed by Government is varied according to the ability, and willingness of parents in any particular area to raise cash for educational basics, like books.

I should like to support Sir Keith in this matter, and indeed urge him to go further. After all, hospitals already rely heavily on sponsored walks and pub collections for the provision of scanners, dialysis machines and spinal injuries units. Why not police committees jumble sales for extra panda cars and walkie-talkies? Watch committee bingo nights for better fire engines? Street lighting, road maintenance, sewerage? Why shouldn't we be encouraged to meet more of the costs locally?

Sir Keith's approach has the added merit of being nicely democratic in that we get the services we are prepared to pay for. Extended to the nation as a whole, it could of course help resolve the biggest dilemma of all. The Cruise Missile Lottery? The Trident Appeal?

CHRIS DUNNE
3 Glen Court Hill
67 Burnt Ash Hill
London SE12

Letters for publication should be kept as brief as possible and typed on one side of the paper, unless The Editor has asked for more. The Editor reserves the right to edit letters.



● From The TES, February 15.

Sir Keith's quality

Sir - Ted Wragg finds Sir Keith Joseph "charming, very likeable". This would not, apparently, be the judgement of the girls of The Hill Wood School, who report, in the same issue, his bullying rudeness to them when he was recently a guest in their school.

However, one certainty at least emerges: whatever Sir Keith's views on the quality of teachers, if he is unable to cope with youngsters' questions with more tolerance and good manners than on this occasion, he himself would be, very unlikely to survive very long as a teacher at any decent school.

ERNEST GOODMAN
8 Hardy Grove
Folly Lane
Salford M6 6JH
Manchester

A short let

Sir - As a primary school caretaker in sole charge I was interested in your article on usage of school premises out of school time (TES, February 15).

The problem with these out-of-school lettings is that the caretaker is responsible for the security of the school premises and has very few evenings to call his own. In my case I will not entertain lettings on a regular basis on Wednesday and Thursday.

Monday, Tuesday and Friday are let until at earliest 9.30 p.m. this on top of a 6.30 a.m. to 6 p.m. working day.

The same problem arises for weekend lettings. An occasional letting is acceptable but the 26 before term made for a Saturday morning let is not worth the loss of leisure time involved.

M R BACON
67 Fairfield Road
Rugby
Kent

Great divide

Sir - I found the article on Notting ham's small school project (TES, February 15) most interesting.

But what a coincidence that all the featured "first class primary practitioners with a progressive outlook" were women and all of the headteachers and the inspector mentioned were men.

LESLEY JONES
204 Southwell Grove
Shirley, Solihull

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LETTERS

Studying home economics helps learning process

Sir - I would be interested to know at which primary and secondary schools the anonymous author of "The new inquisition" (TES, February 15) is governor. I do not agree with the main thrust of his argument that questions to promotion candidates on mixed ability and multi-ethnic teaching should be secondary to questions about academic standards, and I take particular exception to the author's contention that "games, PE, dance, drama, art, cookery and needlework (are) activities pleasurable, perhaps, in themselves but which do little to develop cognition or the ability to think and learn."

As head of a home economics and textiles department in an inner London school (which teaches in mixed ability groups, and is strongly committed to the principle of equality in race, sex and class) I object most vigorously to this contention. Even the subject

titles used - "cookery and needlework" - are many years out of date. However, I'm sure I speak on behalf of most teachers in my subject area when I state that we are primarily concerned with developing the processes of learning. The study of food or fabric is merely the vehicle by which we hope to achieve this end.

We had hoped this message was becoming widely accepted. I am horrified that the author of the article is a governor of an ILEA school, and should show such ignorance of the curricula of both primary and secondary schools. The ILEA home economics inspectors have worked very hard - and I believe most effectively - to change an outdated image of their subjects.

The subjects of home economics and textiles are "expensive" in terms of resources. Surely the author is not sufficiently naïve to believe any local

education authority, in a period of harsh financial cuts, would continue to fund areas of the curriculum on the grounds that they might be "pleasurable in themselves". All the seven areas mentioned are fully capable of justifying themselves in the whole school curriculum on firm educational grounds.

The Taylor Report of 1977, on school governing bodies, recommended better training for holders of the crucial role of school governor. With the publication of articles such as "The new inquisition" the importance of such a recommendation is shown to be even more pertinent, eight years later.

STEPHANIE E BEDFORD
Dick Sheppard School
Tulse Hill
London SW2

The new inquisition

From
The TES
February 15

order to encourage support for bad new.

It also became clear that a teacher's prospects depended on his familiarity with "forward-looking" jargon and upon his declaring himself to be "fully

committed to the comprehensive ideal".

It became depressingly clear that, having thus obtained posts in the new system, teachers would suffer more worry, distraction and frustration in the course of teaching less effectively and for less pupil contact time than in their former selective schools.

A pity that there should be legal reasons for the anonymity of your contributor. His article should be compulsory reading for all heads and I.e.s. officials.

STELLA and DAVID
STRAWBRIDGE
222 North Allington
Bridport, Dorset

Bad new methods

Sir - My wife and I - both science teachers retired early as a result of comprehensive reorganization - wish to lend our support to all the views expressed by a school governor in your feature "The new inquisition" (TES, February 15).

The troubles are not confined to the ILEA. Throughout the many years of meetings building up to the creation of a new "neighbourhood" comprehensive (in another part of Dorset) we encountered all the disastrous tendencies and unfortunate doctrines referred to in the feature - and more. All manner of "Aunt Salles" were set up as representative of bad old methods in

Workshop plea

Sir - Your correspondent J H Cluer (TES, February 8), rightly identified the "old-fashioned" view from the "disappearance" or "high-tech" workshop theory and practice with the introduction of the new GCSE examinations. I write to support his view and to appeal on behalf of many students for its retention.

South Cheshire has a long engineering history and supports numerous large, medium and small engineering companies, all of whom hold the subject EWTP in high esteem because of the qualities outlined by Mr Cluer. It is, therefore, not surprising that a number of schools in this area offer the subject to both O and CSE level and find a large number of pupils opting for it because they see it as a passport to such firms as Rolls-Royce Motors Ltd, British Rail Engineering, ERF Vehicles and the Royal Ordnance Factory, Radway Green.

Under the new national criteria it appears that the only practically oriented subjects to be offered at CSE are CDT Technology, CDT Design Realization and CDT Design Communication. A detailed study of these syllabuses reveals that the theoretical content far outweighs the practical, a division which is hardly likely to engender itself to pupils.

There is certain to be a considerable reduction in the number of pupils studying engineering related subjects

as a result of this proposal.

A HILLIER
Head of Craft
Sharncliffe School
Kings Lane
Sharncliffe
Crewe
Cheshire

Balanced course

Sir - I write to support the plea for the retention of the engineering workshop theory and practice Associated Examining Board syllabus.

The course provides a balance of theoretical, design and practical experience which the pupils evidently appreciate as we regularly enter some 30 pupils each year.

The syllabus is also appreciated by employers in this area as many pupils who do not proceed to A level courses do gain good apprenticeships in various types of engineering.

It is also worth noting that the syllabus is being updated, with an option on numerical control of engineering equipment being introduced.

I strongly urge that while the national criteria are being evolved provision should be made to include EWTP within the final framework.

P BRATHWAITE
Head of CDT
Yateley School
Chamberley
Surrey

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(0887)

Poor Marx

Sir - Assuming your report on Mr Honeyford's views on "left-wing educationists" (TES, February 8) to have been a fair one, then his contribution to the *Salisbury Review* suggests certain misunderstandings about Marxism as profound as they are widespread.

He asserts an "orthodox Marxist" notion that human nature is merely a culturally defined, historically determined artefact. Such a view denies the material base of our biology and reduces the mechanism of development to a reactive response to the social milieu. It is therefore both idealist and mechanistic and in direct opposition to the fundamental philosophical position of Marxism, which is materialist and dialectical.

He also appears to associate multi-racial education, anti-semitism, black studies, and life skills uniquely with Marxism. Perhaps his article justified such an association more convincingly than do many exponents of these curricular innovations.

It is indeed an astonishing view to hold of our educational system, that for the last 40 years it has been dominated by the ideology of the Left, a view perhaps tenable only if one is totally confused about what that ideology might be. Such confused analyses, however, will continue to be advanced in this country as long as notions put forward as Left, left-wing and leftist

continue also to be unquestioningly identified as Marxist - and that for both sides of our current political divide.

ANDREW SUTTON
Department of Psychology
The University of Birmingham

Not dogma

Sir - I am writing in response to Mr Ray Honeyford's attack on left-wing educational issues. He is supposed to have included in his attack, like all teaching, which he regards as an embodiment of "the orthodox Marxist notion that human nature is merely a culturally defined historically determined artefact". For your reader information, the term "life skills" came into common use in this country after the publication of the Manpower Services Commission document, "A National Guide to Social and Life Skills" (1977), and has been included in subsequent schemes for employment and unemployed young people, the Youth Opportunities Programme, Unified Vocational Preparation and Youth Training Scheme, and we all know that the MSC was renowned for its Marxist dogma.

PETER RIDGE
27 Woodlea Road
Worthing
West Sussex

tion of a new category of pupil - the "stated pupil".

Provision may have been cut back, but hypostatization has taken place, and the new jargon masks the absence of real progress.

JILL CRICK
Crickle
Cranford Community School
Hounslow

No word shortage

Sir - Whatever the difficulties of implementing the 1981 Act, at a time when many educational resources are being reduced, one change is evident.

We have accepted the invention of the process of making a "statement" of a child's need for special education. The result of this process is the crea-

Parents excluded

Sir - We have just read the feature (Needs must, TES, February 22) about I.e.s. a tramping on parent rights under the 1981 Act. At the moment, our daughter is being asked for a statement. All three professional contributors have seen her, and we have submitted our own evidence.

We telephoned our authority's named officer to ask when to expect a draft statement, and we were told there was to be a case conference this week, before the draft statement is sent out. Assuming we were to be invited, we asked for details, and in horror he exclaimed that parents are not invited to case conferences because "professionals want to discuss the child out of parents' ears".

Alarmed, we took this further decision officer who confirmed the decision verbally, that if we overrode professional arguments against ourselves we might use this as a weapon if it went to the appeal stage.

Clearly, any possible disagreements will have been laundered out of the draft statement before it is sent, and our authority doesn't even let the decency to call it an "informal discussion". We agree with the writer of the article that this is an appalling situation, directly contrary to the spirit of both Warnock and the Act.

CHRIS and LINDA GOODEY
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London E6

are advised or instructed not to give their time to such work?

The reaction of Government and local education authorities can hardly be termed vibrant or even perceptive. The employers seem intent, on preserving a preference of well-being and officers seek to walk a tight-rope between councillors and teachers. Admittedly, Government, through the Secretary of State, has initiated proposals, but is doing little in the present deadlock on their except pass the buck back to the employers who are themselves constrained by Government guidelines and union intransigence.

I worry increasingly that this present drift towards a virtual death wish will go so far that it will take decades to bring about a revival of satisfactory relationships. Are we not approaching a position where the only way out will be some form of fully constituted inquiry into the well-being of the profession with decisive recommendations expected of it?

Now, like most heads under pressure from all sides, I can but dolefully misquote Shakespeare with "A plague on all your houses".

A B DANIEL
Headmaster
Cecil Road
Gowerton
Swansea

Wide delivery

Sir - Roger Truelove's article (TES, January 25), while containing much that was true about the state of cricket in schools, had factual omissions, inaccuracies and faulty conclusions, especially in regard to what is occurring in state schools, where the situation is dramatically worse than in the independent sector.

It is the case, as he says, that an increasing number of schools are entering English Schools' Cricket competition, and that state cricket for young players is expanding, but beneath that veneer there is a decline in the quantity and quality of cricket and in the provision for the sport. The number of schools entering the Staffordshire Under-14 Lords Taverners Competition in 1983 and 1984 were 53 and 49 respectively. These numbers are among the highest for any county in this national competition, but in the area there are 13

schools with pupils of that age. Some local competitions and fixtures survive, but the majority of school sides are ill-prepared and play few matches. My observation is that cricket is increasingly becoming a game played by a select minority. It is also increasingly the case that boys capable of playing in the Staffordshire Under-14 side are almost entirely absent from

members of cricket clubs, have fathers who have played cricket and come from a declining number of schools.

Our experience is of a small pool of players of that kind of ability, potential attending trials for county sides. The simple and least expensive solution is to concentrate on that minority. However that would not, in the end, serve the best interests of many pupils who could enjoy playing cricket, the clubs, or standards at county and national level.

FE advisers in the area are the key men. They ought to be the prime movers for change and progress. The BSCA must get them together and thrash out a national campaign of well-defined and simple objectives for schools and I.e.s. to accomplish.

A P PICKERING
Staffordshire Under-13 manager
and chairman of Wolverhampton Schools Cricket
Regis, Comprehensive School
Wolverhampton, W.C. 2 3 3 3

Exchange is like robbery

VALERIE ADDISON

I am currently participating in the Teachers' Exchange Scheme to the United States organized by the Central Bureau for Teachers' Exchanges and the US Information Agency.

Although, theoretically, this is a wonderful opportunity to experience at first hand both a new education system and life in a different country, I feel that anyone contemplating such an exchange may benefit from reading of my experiences and so avoid making similar mistakes.

Although you exchange teaching posts you do not exchange salaries. Remember that when you receive as a monthly salary is dependent on the exchange rate. For us, this year has been a disaster. My salary has effectively dropped by \$70 (£64) a month since my arrival last August.

My exchange partner earns over twice as much as I do and without exception all teachers here receive almost twice my salary even though I have a Scale 3 post with special allowance in England, and the state of the lowest paying. So even with our cost-of-living grant and non-tax year there is still a large discrepancy.

All American teachers coming to England benefit from our National Health Service. We have to make our own arrangements and meet the necessary cost. All teachers here receive free medical cover provided by this local education authority but I could not benefit from this as they were still covering my exchange partner, although she does not need the cover. I know other areas have similar policies.

If, like me, you have to arrange your own policy be prepared to meet any necessary medical expenses to begin with. My nine-year-old son recently injured himself skiing and needed immediate medical treatment.

The doctor was very good and efficient but reluctant to accept my "foreign insurance", as "they can be difficult". He preferred me to meet all expenses and claim them back myself. Knowing that the only important thing was to get my son's head stitched up as quickly as possible I agreed. Fortunately, I have made some very good friends who lent me the money. But when I repay them, approximately £200, it is going to leave me very little money next month.

When you contact your partner to discuss the exchange of property it is worth considering that there could be cultural differences. Certainly my experience has been that although we spoke the same language our interpretation was different as were our expectations.

Accommodation was a problem for both my partner and myself. She left her family in the US and therefore could not offer me her home - I wished to leave my house up for sale, which meant I was still committed to paying a mortgage. Eventually it was decided that she would live in my home and pay for heat and telephone but that in the event of it being sold she would move out and find alternative accommodation which she would pay for. I would pay for my accommodation here. I made it clear that as I was already paying for a mortgage in England I could not afford a great deal. My partner had great difficulty in finding me somewhere as rents are extremely high (between £250 and £300 per month for an unfurnished flat). Also children are not welcome.

My accommodation is not as described by my partner and although she made the arrangements in good faith, she did not visit or check details.

In the deep end

ANDREW CATHCART

As I mused just recently, on Sir Keith Joseph's Chester speech, I caught a glimpse of the problem which I now feel that I ought to commit to paper before it fades away.

Thinking of myself as a swimming teacher, the evaluation/accountability debate, until now would have generated the following response. I would be opposed to an evaluation process which was based on the number of children that I taught to swim. It could be quite unfair, because my class could be made up entirely of inner-city children who never went to the baths in their spare time.

So the "inspector" making the evaluation could downgrade my efforts in contrast with other swimming teachers who taught groups of highly motivated children, well-went to spending their free time in the baths.

I would argue that the evaluation would be unfair, that I am not responsible for the children's swimming

Remember Jones...
You're not only doing this for the school,
You're doing it for my wife and kids!



results, even if every other child in the city reached a higher level of attainment. The children's ability to swim was simply beyond my control.

Instead, I would ask to be evaluated on the things that I could control - for example, I established a relationship with my pupils, observed essential swimming principles, prepared my lessons and dressed appropriately. This

must be seen as sensible if not vital to include this aspect of life in the curriculum. "But we are learning about this all the time," objected a bright fourth-year lad. And he was right - in his case. He was living, almost minute by minute, alongside his raging development as a person. Many do not learn.

What do we mean by personal relationships? In brief the flux and ebb of relationships, awareness of self and others, difficulties and possibilities of communication, the twin aspects of jealousy and envy, the power of negotiation and compromise, and a hundred other elements which so profoundly affect our lives.

The question is not whether these things should be taught but how they should be taught. The nature of the content may best be left to small groups where simulation, role-play, discussion and similar activities are perhaps the most appropriate methods.

These methods are often most effective with smaller groups - a teaching situation which makes particular demands on both teacher and taught. Since the quality of life is so dependent upon relationships, it is so dependent upon the quality of the teaching to embrace these complexities that they

TALKBACK

However, I cannot afford to move. Although we are warned against exchanging cars I in fact did. It seemed to make economic sense as both of us had old cars of the same age. However, this proved to be the worst thing I could have done and has led to a great deal of bitterness on both sides and involving in the extra expense of having to purchase my own car anyway. There is no public transport whatsoever in this area and a car is essential.

If there are any disputes between your partner and yourself you must be prepared to solve them yourself, which can prove difficult and frustrating at such a distance. The US Information Agency in Washington will only interfere if your problem involves teaching.

As we are asked not to comment publicly on our teaching situation I am unable to do so. However, suffice it to say that this is the one area where I have felt it has all been worthwhile. Though if I am honest the obvious discrepancy in salaries, the worry over money and my dispute with my partner are all beginning to colour my attitude to my work.

I know that I chose to come here but when you are aware that your partner has already enjoyed two very expensive continental holidays and is also touring England at every available opportunity, why should you worry whether you can survive until the next pay cheque arrives and knowing that when it does it will be appreciably less than the previous month, one can't help feeling the injustice of the situation.

For those of you contemplating an exchange, I would advise you not to consider it without some adjustment in salary or unless there is a much more secure exchange rate. Although it is a wonderful opportunity the cost at the moment both financially and emotionally is, in my opinion, too high.

Valerie Addison is currently on a teacher exchange scheme in Vermont.

Is the price right?

COLIN BULMAN



Research into the effects of violence in television programmes on children is characterized by two things: its extent and its inconclusiveness. But there is a kind of TV programme which is more pervasive, more pernicious in its effects, and more likely to instil undesirable attitudes in children: though I have to concede that my research into this is less extensive than that devoted to violence on TV and just as inconclusive.

The programmes I am alluding to are the ubiquitous quiz shows. In a week in early 1985 almost 15 hours of peak TV time were devoted to such shows. There were 25 separate programmes which were strictly quiz shows and eight more which contained quizzes or competitions as part of a magazine format, most of these designed for children. ITV has at least one quiz show every day (sometimes two, Monday and Tuesday), Channel 4 one every day except Sunday, BBC1 at least one every day, and BBC2 none, although quiz shows sometimes appear on BBC2.

What is the underlying premise of these shows which often masquerade as something which is almost educational? After all, questions and answers are the stuff of much education. It seems to me there are two

elements to all the programmes: a cult of facts for facts' sake, and an appeal to gross materialism.

Almost all the programmes provide prizes, and these range from the modest trophy or token prize to holidays worth hundreds of pounds and even cars. The majority of shows have valuable prizes judged on a purely financial criterion.

Statistics suggest that a show's popularity is related to the value of the prizes given away and there is absolutely no correlation between intelligence required to win and the value of the prize.

Often luck and guesswork such as is found in *The Price is Right* is as important as wisdom, and virtually no show requires powers of reasoning as opposed to memory for often unrelated facts. Materialism at its most rampant is all revealed in *The Price is Right*, real on the part of the studio audience from whom the contestants are chosen at random, and vicarious on the part of the viewing audience. The presenter of this show encourages the materialism in a blatant way, but concentration on prizes and rewards is emphasized in almost all these programmes.

It has been suggested that there can be an educational element in quiz shows. We might learn something in the course of other people answering questions. I asked classes of teenagers to watch *Mastermind* and *Ask the Family* and the questions, which were put to them again within a day or two of the programme. Results suggested that little was learnt. This is not surprising, of course, because there is no incentive to remember the isolated facts which are the stuff of most quiz shows.

Mastermind, which strangely appears to have some prestige in the world of quiz shows, is probably the show from which least is learned. The subjects are often odd or esoteric and of little general use or interest. But the setting of a university and the prize of a Calithness glass gives the show an undeserved aura. The requirements, as in most quiz shows, are a good memory and a certain speed of recall. Reasoning plays no part at all. A more accurate title for *Mastermind* might be *Master Memory of One or Two Subject Areas*.

If quiz shows teach anything, it is that unrelated facts are important and that material reward is the desirable outcome of being in possession of such facts.

Gratuitous violence may be deplorable in some TV programmes, but it is thin on the ground in comparison with quiz shows.

Colin Bulman teaches at Huddersfield College.

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(088)

FEATURES

After all, we have done so before in

relationships in the college. Genuine education cannot be forced. The orga-

There is no doubt that many of his

There is now a serious danger that we could end up with a hierarchical management structure which is the same as any other secondary school in the country with all the problems and

Virginia Makins dutifully presents the issues as simply technical. They are not. They are complex and profound and about a future for comprehensive education. As her article said, Oates is a very fine school. We cannot let it decline. We urge the governing staffs to give us

Alas, there were no indiscretions, only awe-inspiring insights into the life of a 45-year-old computer whizz kid and a neatly potted biography.

At the end of the year he was offered the rotating head of department job but not the

As for what remains for a high flying achiever, he'd like to see the company firmly established, he says, "and providing a secure and stimulating working environment for a number of people. I am very conscious that on the other side of the door are people with families, mortgages, responsibilities who depend on the firm and that we are

The series devoted to former teachers next week, the man who has sold 82 million textbooks Ronald Blount.

Hearts and minds

Julia Hagedorn visits a village school run by a former advertising executive

Sarah Worster arrived to take up her first headship at the tiny village school in Somerset's Wheddon Cross in January 1982. The winter blizzards arrived at the same moment and, since Cutcombe VA first school is the highest village school in Somerset at over 1,000ft, it was soon cut off.

Sarah, who was living in the school house then, was not defeated and managed to open the school alone for the start of her first term. Parents cut a way through the snow for children in the village—and it was business as usual, at least for some of the pupils.

Sarah, being the kind of person who thrives on a challenge, soon had the children making igloos in the playground. But, not surprisingly, when she shows a visitor round the school, she points to the boiler house and says: "This is what being a village head is all about. I spend one per cent of my time here."

Cutcombe has 29 children at the moment. There is one other teacher, Maxine Stanley, who takes 17 four to seven-year-olds at one end of the large divided school room and, at the other end, Sarah has 12 seven-to-nines.

Both geographically and in every other way, it is a very long way from the world which Susan used to inhabit when she was the first London woman account executive with J Walter Thompson, the advertising agency. But the creative and organizational ability she demonstrated in those days in London is very much an intrinsic part of her teaching life now.

Critics of small schools base much of their argument on the impossibility of one or two teachers covering the curriculum satisfactorily. I looked hard for areas where the Cutcombe children were missing out but did not find any.

Sarah plans a theme for each term, making sure that it relates to history, science, geography, art, maths and some English is taught outside the theme work. Every child's work is also meticulously planned and recorded each day. "Some of the children are very good at writing," she says, "and I like to see the children organizing their own time because, she says, that is part of learning to work."

At the end of the day, the children gather round to check with her exactly what they have got through—and what they need to finish off the next day.

Music is an important part of the day—although in Somerset instrumental lessons now have to be



Sarah Worster believes in the integration of arts and sciences

paid for. Classical music is played at morning assembly because, Sarah feels, it takes time to appreciate good music and the children need to hear a little each day. "The school also has an impressive range of instruments and, on the day of my visit, breakfast was spent with an impromptu orchestra tuning up in the computer room. The children also listen to music when painting. In the school's entrance lobby there were some delightful seascapes with descriptions such as "I imagined that the sea was calm and the sun was stretched across the sky."

The children also draw from life, sometimes then modelling the object afterwards. Sarah's

attitude to 3D work is an example of how she ensures that the children do not miss out on anything. She felt that 3D was important, as part of craft, design and technology, in understanding how things work, but recognized that she did not have much expertise in it. So she went on a course, although that meant giving up the day she has off once a week for administrative and office work.

Sarah has also persuaded a young sculptor who lives in the village to come into the school to work on a piece of Portland stone. He is watched closely by the children to see what will emerge. Jonathan, aged 8, said on seeing the piece of stone: "You feel what it might come out like in your heart and in your head. It's like a caterpillar coming out of its chrysalis."

Behind all the planning and all the ideas, two factors emerge which are decisive influences in the style of the school. First, and foremost, Sarah is a scientist. "That's the way I think. But so much of science is learning attitudes and ways of approaching problems and that goes into every area of the curriculum. It's a willingness [for children] to question their own assumptions, to examine their own and other people's work critically, to develop the idea of a fair test. To recognize that a change can be brought about through more than one cause."

She sees science more as an approach to understanding the world than as a body of knowledge. And she believes that you get the best inspiration when integrating the arts and sciences into one whole: thinking both creatively and scientifically.

The other important element in the school day comes from the fact that Sarah is a committed Quaker. Morning assembly includes prayers, and grace is said before lunch. The children are taught to be tolerant and kind to each other: the slower ones are praised enthusiastically by the others when showing a piece of finished work. Sarah says: "If you start with love—of the parents and of the children—you can't go wrong." And of the Quaker philosophy: "It is important to use the talents you have to the best of your ability but it is wrong to want power and status."

Was this then why she had left the heady world of expense lunches and intercontinental flights? But Sarah sidestepped the question and answered it in another way: "All my family went into teaching—my mother taught for 30 years. I went into advertising to escape, but I always wanted to teach underneath."

Nevertheless, the drive that she must have shown in her interviews with J Walter Thompson after leaving Oxford University in 1963, now

leads her to be constantly on the go. During her teaching career, she has picked up two distinctions in Open University courses, an MPhil from Exeter, and now does in-service lecturing work for her own county, runs sessions in Devon, is on the local NAPE committee, has been part of the DES-funded courses for heads and deputies, and is on the primary headteachers working party in Somerset.

She also finds time somewhere to keep up with current research: "I love everything I do. Even reading books on education. They are like blood to me. And I even love learned papers; it's like opening Christmas parcels to receive them. But one needs activities outside the village and the school to see yourself in context. There is so much going on in education at the moment, and if you plug into it you can get so many new ideas."

So far it sounds as if Sarah runs the school single-handedly. But she would be the first to correct that impression. She says it is really only Sybil Williams, clerical assistant, dinner lady, chairman of the parish council, and governor of another school. It is she who has her finger on the pulse of the village.

And Sarah holds "brain-storming sessions" with Maxine Stanley which, she says, help to keep an evaluative climate in the school even if they are only the two of them. "We both influence each other and we agree about not blaming the children for their problems. We try and see them as our problems."

She is also very aware that much of what she can achieve is due to the fact that there are so few children in her class. This, she says, gives her time with each child to see where they are and how they respond best and balance that response with how she moves that particular child along. With children of so many abilities, she has to make sure that each one progresses. "Belonging at maths, for example, can be a learning point. It is a challenge to be seen in a positive light. You can't keep up that individual attention of you have 35 children in your class. It's totally draining."

With so many ideas flying around in her own head, Sarah communicates much of this excitement to the children. Though she admits that she is not careful the children can go off in different directions like fireworks.

Indeed, I witnessed some of their impetuosity on the day of my visit but I also saw Sarah bringing them back to the business in hand—in this case determining the variables in rubber band, jar or box when measuring length of reverberation of changing the pitch of a note.

All in all, does she ever get nostalgic about her former career? Sarah says simply: "So often school is amazingly fulfilling, peaceful and exciting all at once." She has recently moved back into the village to be even closer to the school's parents and pupils because "I didn't like the feeling of being in two places at once."

Reading it that week—and then they keep reading it."

Another parent, Elizabeth Jarvis, who has a 16-year-old daughter, Yvette, says: "I think the Recorder is very important to the school. We get a better turn out at fêtes and other events and I believe it does good for us all, gives us more interest in the school."

At Holland Park School, where Rowie Shaw runs a weekly newsletter for three years, parents are now producing their own fortnightly bulletin. Their involvement started when the parents' association began contributing their own section to the existing bulletin. It quickly expanded to a whole supplement and during last year's annual dinner, the parents kept it going. At the beginning of the autumn term they agreed to produce a fortnightly newsletter themselves.

The newsletter, orientated mainly towards parents, now alternates with a bulletin produced by the pupils.

Christopher Penfold, who has two daughters at the school, is the editor of the parents' newsletter and he draws on a pool of some 20 contributors. "Another school with a long-standing weekly newsletter which earned a mention in the Hargreaves Report is Bishop Thomas Crampton, Stratham."

Geoffrey Heywood, the deputy head, who has been responsible for the newsletter for five of the fifteen years, says: "It is quite difficult to get parents involved. There is a keen enthusiasm, whose children are probably doing reasonably well, who don't see any need. So any information you can pass back to parents, letting them see the school is concerned to keep them informed, is good."

"If we stopped our newsletter, parents would want to know why and feel affronted. It's a bit like writing to someone for years and then suddenly stopping your letters. They would never forgive you."

However, a critical, symbolic difference between the two sectors is that the primary parent usually arrives daily at the school with the child, but in the secondary school the parent has to

The second time around

The size and complexity of secondary schools may make good parent teacher relationships more difficult than in primary schools but they are no less important, Jean Lawrence and Marion Perry argue.

Most of what has been written about parental involvement in schools has been concerned with primary schools; only rarely—except in relation to close parental collaboration at the secondary stage elaborated. Yet the secondary child is just as likely to lose out for lack of it.

A small number of secondary parents work away at the links, but some are frightened off by unfortunate experiences with a previous primary school, by the secondary school itself, or by their own, personal secondary school experiences.

There are several fairly obvious similarities between parental involvement at primary and secondary levels. There is, for example, the need for parents to have information about the school. There is also the need for the school to help parents to add to their knowledge of child and adolescent development.

Recent research into the teaching of reading and the Portage schemes in which parents are taught to help their handicapped children acquire basic skills shows that parents can also teach children. Furthermore, at both levels there is a need for sympathy between teacher and parent, and a willingness to negotiate.

Both parties need a good attitude towards each other. Schools must honour the emotional bond between parent and child and the parent must honour the teacher's professionalism. Both need patience and restraint, and a readiness for a sensible, knowledgeable and willing exchange of views, in potential conflicts.

There are, however, important ways in which parental involvement at secondary level differs from that at primary. The size and complexity of secondary schools can be confusing to parents.

The pastoral system may mean that the person they have to see about their child seems neither to teach him or her nor to be the headteacher. The differences between form, class and tutor group staff and understanding the importance of a head of year or head of house is a labyrinth; often the subject teacher they actually want to meet seems to be protected from parents. How do parents comprehend the complicated timetable commitments for the year of house head and know if they are the right person to contact about showers after PE, the lack of maths homework or a lost library book?

Primary parents can call in and expect to see a teacher. Secondary parents may have to make a long journey or telephone call only to be told by an overpressed member of the office staff that the person they need is teaching. For many parents, having to write a letter requesting an interview can be an even greater stumbling block and mean delay, allowing a comparatively small concern to become a much larger matter. Which teacher will have a telephone extension? What time do they go home? Are there meetings after school every day?

The structure of the secondary school needs to

'How do parents know the right person to contact about showers after PE, the lack of maths homework or a lost library book?'

be carefully explained to the parents with reminders at regular intervals. The school can appear to have an excellent pastoral system for the staff and pupils but it may be a real hazard to parents and can seem like a way of keeping parents out of the school. The loss of the casual, informal contact with the class teacher in the primary school needs to be compensated for by a welcoming and comprehensible system in the new and larger school.

Examinations, careers and delinquent behaviour assume greater prominence in parent-teacher contacts at secondary level. But, clearly, secondary schools have to take account of the greater independence of the almost-adult pupil. This does not necessarily mean that parents are any less anxious about their offspring at this stage, for while the parent of the young child commonly fears that early trends must be reversed, less they later be as entrenched, the parent of the adolescent is worried, because the stakes are already high.

However, a critical, symbolic difference between the two sectors is that the primary parent usually arrives daily at the school with the child, but in the secondary school the parent has to

be sent for.

A further major difference is that secondary parents may feel far less sure of themselves than primary parents because the primary curriculum is so much less specialized. Many secondary parents feel totally lost when faced with the new and different subjects of their child's curriculum, whereas many parents can help their children to read. Thus parental involvement and liaison at the primary stage is probably easier for both parents and teachers, and this helps to account for current emphasis upon it.

But the bigger gap between school and parent at secondary level leaves room for great conflict when parents do ask for something to be done.

In such a situation there is anxiety on both sides. If the parent says something more needs to

be done than has been done, this may rapidly be interpreted as an accusation of negligence. Parents, on the other hand, are anxious because they have had to enter an unfamiliar zone to lodge their complaint, or what is interpreted as a complaint.

These anxieties express themselves as fight or flight, in both teacher and parent. The teacher may fight, get angry, snap, write curt letters, or flee by doing nothing about what the parent is asking for or by not communicating. The parent may fight, get abusive, occasionally attack physically, or write angrily or over-hastily to other higher authorities. Or he or she may become self-effacing, not argue effectively, submit to whatever is done while not agreeing with it, or finding it insufficient.

The teachers' fight-flight tendencies are exacerbated by fear of officialdom, and the parents' by the fact that they dote on the child and/or have fears of being inadequate parents.

This being so, the issue of what it is reasonable or unreasonable for a parent to ask a school to do becomes immensely important. If the request is reasonable, then the fight-flight positions may not be taken up, and the negotiations may be easy and fruitful.

We suggest that schools should accept that the following parental requests and expectations are reasonable:

- 1 To ask for information which is available to all parents; it is unreasonable to ask for information which is not available to all parents.
- 2 To ask to speak to a teacher, provided the parent is prepared to control his/her hostility. Where a parent is overtly hostile to the teacher, the head will wish to protect the latter, and may restrict direct access to the teacher or at least ask that the interview be conducted in the presence of him/herself or another teacher.
- 3 To ask for discussion of a change of class or lesson for the child which is available within the existing grouping arrangements, and to be sup-

'Teachers feel threatened and under attack... parents are anxious because they have to enter an unfamiliar zone to lodge their complaint'

plied with the reasons for the decisions which are reached.

4 To expect that in general full reasons should be given for any steps taken or not taken, so that a written reply will be a long one, rather than a short, curt one, and will be couched in appropriate language.

5 To expect patience and good humour in staff dealing with their cases. It is fair and reasonable to expect that teachers will be more in command of themselves and the situation than the parent.

6 To expect generosity in the timing of the interview. The school should be prepared to see the parent early in the morning, or, if necessary, in the evening if a working parent is to be present.

7 To expect that wherever feasible any necessary enquiries will have been made of staff before the interview. On this point, it is obviously helpful if parents make clear the reasons for the interview, so that such preparations can be made.

8 To expect that the child will have a share in the discussion, without pressure being put on him/her, especially if he/she is present for the whole interview.

9 To expect that access will be offered to out-of-school as well as to in-school facilities (education welfare, remedial and medical facilities, and support groups).

10 To expect promptness in all dealings. If something is to happen, it should happen fast, without parents needing to remind the school of its promise. A time should be specified within which action can be expected to take place.

11 To expect that there will be no threats or blackmail, that parents' self-esteem will be left intact, that parents will not be made to look foolish but that their contribution will be respected. It is reasonable for the teacher to expect the same attitude on the part of the parent.

12 To expect that information will be given about syllabuses and examination criteria, as well as the information about curriculum which is parents' by right.

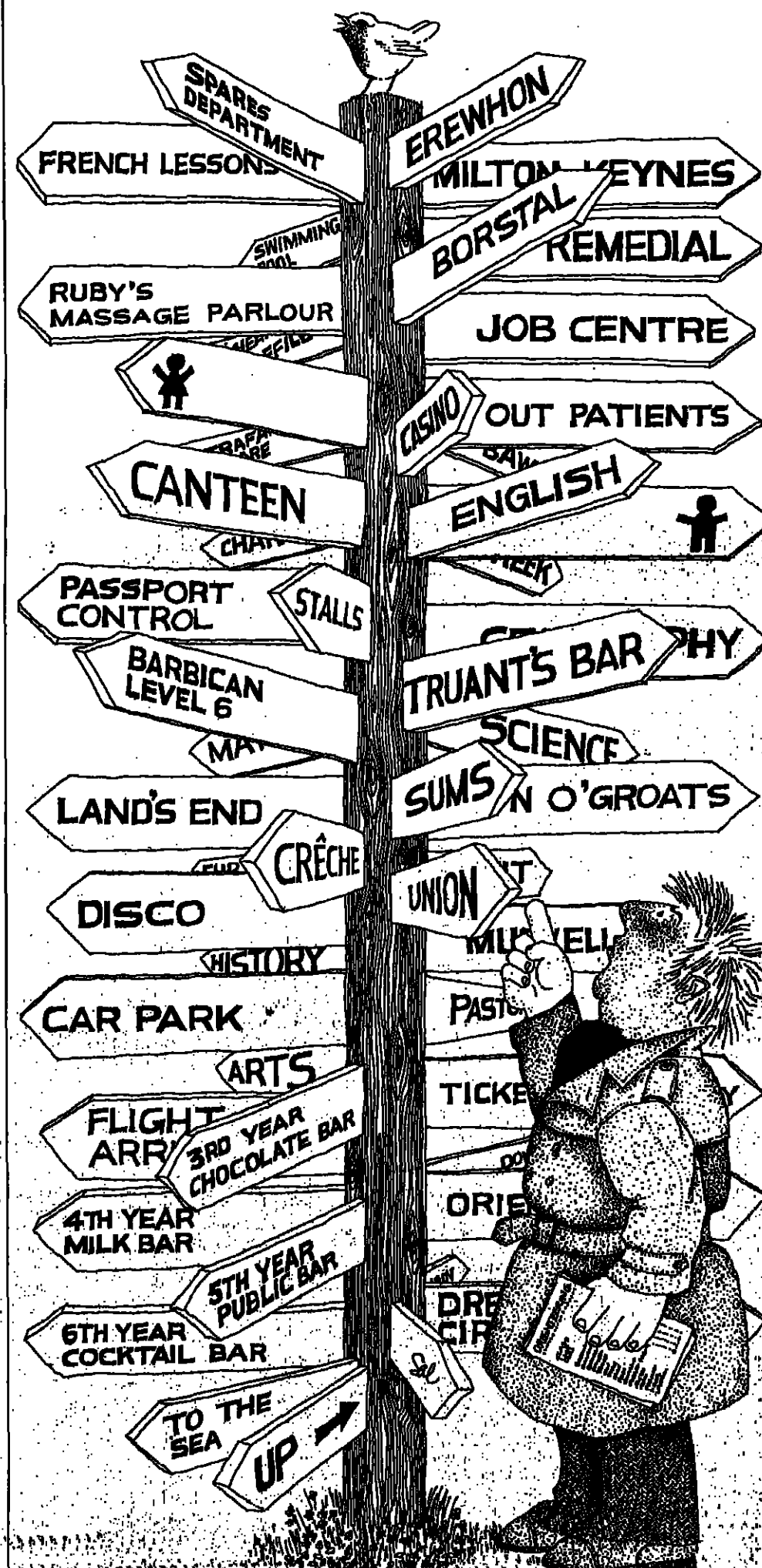
13 To expect that the school will make every effort to communicate with them effectively, sometimes by post rather than by pupil-delivery.

14 To expect that the school will give early warning of impending pupil problems.

It is impossible to specify the best length of an interview: parents should be welcome for both the protracted interview on complex matters and the short "information" interview of the "What should I do about her varicella?" type.

It goes almost without saying that schools can reasonably expect many of the above "virtues" from their parents.

Dr Lawrence is principal lecturer in education at Goldsmiths' College, University of London and author of *How to help your child succeed at school* (Open Books, 1984) and Marion Perry is deputy headmistress at Mayfield School, London.



Some schools give parents a regular opportunity to read all about it

On the face of it, the newsletter printed every Monday by Haggerston Girls' School in East London is just another piece of paper which pupils might be expected to moan about taking home or leave in some forgotten corner of their satchel.

But mostly, they don't moan or forget—and the Haggerston Recorder has gone a long way towards helping foster stronger links between home and school.

Last year the Hargreaves Committee, set up by the Inner London Education Authority to look into secondary education, called for more parental involvement. Haggerston's headmistress, Mary Metcalf, was a member, and believes that much relies on good communications.

The newsletter was suggested by her deputy head, Rowie Shaw, two years ago. Now she says: "Parents come to expect the newsletter. The whole secret of its success is its regularity. If they don't get it one week, they ask their child what has happened to it."

The East End is a notoriously difficult area from which to draw parents into school. The 940 or so pupils at Haggerston come from Hackney council estates and many different cultural backgrounds; 27 languages are represented in the school.

Rowie Shaw had already found a regular newsletter worked well at her previous school, Holland Park—and she tackled the new editorial with equal enthusiasm, spreading her net for a wide range of contributions.

"At first I spent a lot of time saying that I wanted contributions from pupils, parents and staff, and getting them in. But once something gets going, it achieves its own impetus." Now Mrs Shaw has a bulging file of items with which to fill the two sides of the newsletter. They include an increasing contribution from parents, such as information about church-based holiday activities to an advertisement seeking good homes for a litter of kittens.

Many include everything from letters about the school to the latest news about the world.

functions and events, not only in school but also in the immediate area, to the achievements of past and present pupils. There is information from the Parent-Teachers' Association, dates of holidays, a calendar of events for parents, notices about adult evening classes, fund-raising activities, requests for contributions to the Christmas fête or harvest festival. To cater for the multi-ethnic nature of the school, important notices are translated into Bengali, which Mrs Shaw is learning—Gujerati, Turkish and sometimes Spanish and even Cantonese.

On Wednesday and Thursday evenings, Mrs Shaw gathers all the information together—often more than a dozen items—and types them ready for printing alongside illustrations to give a lively lay-out. The Media Resources Department then prints 1,000 copies using offset litho.

In all, it costs around £5 to £7 to produce each week—and around one-and-a-half hours of her time, and although back-up notices are sent home for important school functions such as parents' evening, the Recorder has reached letters home, by half.

"It is certainly a cheaper way of communicating than a plethora of notices which need typing, sorting and distributing," says Mrs Shaw. She is confident that the newsletter reaches most parents most of the time. "You can measure its success by how few are found littered on the classroom floor or dropped outside school," she says.

Diane Latham, whose 11-year-old daughter, Kate, started at Haggerston in September, remembers that the parents of the whole first-year intake were told about the Recorder when they first took their children into school. "I thought it was a nice friendly approach. I hadn't expected a school of this size to show so much interest in the parents."

For the children, being mentioned in the newsletter is like getting your name in the school paper. It's a nice feeling, and it's a bit like writing to someone for years and then suddenly stopping your letters. They would never forgive you."

However, a critical, symbolic difference between the two sectors is that the primary parent usually arrives daily at the school with the child, but in the secondary school the parent has to

Victorian reform

LANGUAGES

**Genuine
accent.**

Women and revolution

the political thinkers of all colours, right, left and centre. Steadman Jones's book became an instant classic, and for this reason alone he provides us with new perspective. Discussing the critical reception of his work, the new evidence from other scholars and some disarming reflections on his earlier rhetorical self. He insists that "if stripped of the adjectival and metaphorical overkill to which I was addicted – and which in a large part was intended as a mimicry of the language of melodrama which suffused the primary sources I employed – I would still want to stick, in large part at least, to the overall periodization and interpretation which I have constructed."

Mayhew's *London Labour and the*

In that respect the letters make sad reading. They also do in showing that boundless, almost obsessive intolerance of others' opinions in all matters affecting what was conceived of as revolutionary politics is no Russian distemper infecting an otherwise open-minded Western Marxist theory and practice; but is something going back to the originators of the theory and practice themselves, and an unfortunate legacy inherited by their successors.

The notes, commentary and introduction are all adequate and helpful.

neither formalized nor classified in the basic units, but as in the first part there are 12 supplementary R units for faster learners. In the supplementary units grammatical structures are listed as

French formula

Cool Guy

CHILDREN'S LITERATURE

CHILDREN'S LITERATURE

more serious human biology, turn to *You and Your Body* (David Keable, Elliott, Beaver, £1.95), which claims to be a complete guide, and very nearly is, covering health, illness, addiction, mental illness and sex in a calm, reassuring but honest way; the only topic I found it dodging was incest. With *Bet You Can, Bet You Can't* (Gyles Brandreth, illustrated by V. Mitchell, Knight, £1.25) we are back to tricks; the youngster with both this and *Body Magic* would be equipped to madden father and friends for months. Which brings us to *Marmalade* (Elliott,

the Big Time. (Andrew Davies, Thames/Magnet, £125); the Womankind Girl in the World and her resourceful donkey friend hit London, which will never be the same again, and I laughed myself sick. In *Rosita, The Robber's Daughter* (translated by Patricia Crompton, Puffin, £1.50), Astrid Lindgren gives us another strong minded heroine, though this is a much more romantic, even sentimental story than her Pippi Longstocking books. Pure fantasy is one way of showing the children, may have unrealized potential.

are two admirable examples of the latter mode, one based in the junior and one in the secondary school. There is a delicious dry mischievous about *Jimmy Zeal* (Sam Mcratney, illustrated by Jimmy Zeal, Doubleday, 1959, \$1.25). Jimmy is a kind of Just William for the Eighties: "Who, Sir?—Me, Sir?" (Doubleday, 1959, \$1.25) is K. M. Peyton, back at the very top of her form: there is something special here for those who are not readers, but plenty for others in the story of a challenge between "yobs," a school and a "nobs" school. It is funny, serious, and with a deeply satisfying happy ending.

Andrew Lasker

The illustration, by John Blanche, from The Crown of Kings, part 4 of Gene Bucklin's weekly series, The Young Adventure Comedies (1959).

Perfume and poison

short history, then gives instructions for growing, drying, and storing herbs and making pot pourri. A beautiful illustrated comprehensive section completes the book, which contains a glossary and an index. Her 40 years experience in running a herb garden have resulted in a delightful and informative work.

Betty Tadman

Investigating Art, reviewed in the *TE* of February 15, is written by Mo Kightley, and not as stated (Bell & Hyman \$5.95)

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THE GROWING EDUCATIONAL PUBLISHER

Bedfordshire Education Service

Headships

Applications are invited from suitably qualified and experienced teachers for the Headships of the following schools. Required for September 1985.

Great Barford Lower School
Silver Street, Great Barford,
Bedford MK44 3JJ

Group 2
Estimated number on roll September 1985 - 80 children aged 5-9 years.

Dallow Infant School
Dallow Road, Luton LU1 1LY

Group 4
Estimated number on roll September 1985 - 258 children aged 5-7 years.

St. Mary's Lower School
Rooktree Lane, Stotfold,
Hitchin SG5 4NN

Group 4
Estimated number on roll September 1985 - 153 children aged 5-9 years.

Swallowfield Lower School
Weathercock Lane, Woburn Sands,
Milton Keynes MK1 2DW

Group 4
Estimated number on roll September 1985 - 189 children aged 5-9 years.

Linslade Lower School
Leopold Road, Linslade,
Leighton Buzzard LU7 7QU

Group 5
Estimated number on roll September 1985 - 362 children aged 5-9 years.

There is also a 40 place Nursery Unit attached. Application form and further details may be obtained from the Chief Education Officer, County Hall, Bedford, Bedfordshire. Closing Date: 8th March 1985.

The Council is an equal opportunity employer. (10653)

Bedfordshire

NURSERY EDUCATION

LONDON
SECRETARY/ORGANISER
Interested in responsible, motivating, challenging work on behalf of children 0-5 years. Various duties including liaison with branches, advising committees, providing information to enquirers. Efficient, friendly person who will enjoy a challenge. Reply to: 2000, 91 Beaches Rd, Chislehurst, Kent RM2 9JL. (08963) 100026

SEPTON
METROPOLITAN BOROUGH OF SEPTON
EDUCATION COMMITTEE
TEACHING POST
ST. WINIFRIDE'S R.C. INFANT SCHOOL
Fembridge Road, Seaton L20 7AY.
A temporary nursery class teacher (SCALE 1) required immediately to cover for maternity leave. Applicants should be suitably qualified and/or experienced. Salary scale £26,000-£30,000. Application forms and further details available on receipt of s.a.s. from the Headteacher, Seaton Infants School, Seaton, Lincolnshire. Closing date: 15th March 1985. (40404) 100026

Primary School Education

Headships

AVON COUNTY
COUNCIL
C.E. V.C.
PRIMARY SCHOOLS
Albany Road, Montpellier, Bristol BS6 5JQ.
In accordance with Group Vacancies from 1st September 1985.
A multi-racial, inner-city primary school with nursery class provision. Built in 1960, the school is designed for community use and applicants should be capable of developing the community aspect of the school. Applications from the ethnic minorities will be welcomed.
ADVERTISING. (83378) 110010

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111, 113, 115, 117, 119, 121, 123, 125, 127, 129, 131, 133, 135, 137, 139, 141, 143, 145, 147, 149, 151, 153, 155, 157, 159, 161, 163, 165, 167, 169, 171, 173, 175, 177, 179, 181, 183, 185, 187, 189, 191, 193, 195, 197, 199, 201, 203, 205, 207, 209, 211, 213, 215, 217, 219, 221, 223, 225, 227, 229, 231, 233, 235, 237, 239, 241, 243, 245, 247, 249, 251, 253, 255, 257, 259, 261, 263, 265, 267, 269, 271, 273, 275, 277, 279, 281, 283, 285, 287, 289, 291, 293, 295, 297, 299, 301, 303, 305, 307, 309, 311, 313, 315, 317, 319, 321, 323, 325, 327, 329, 331, 333, 335, 337, 339, 341, 343, 345, 347, 349, 351, 353, 355, 357, 359, 361, 363, 365, 367, 369, 371, 373, 375, 377, 379, 381, 383, 385, 387, 389, 391, 393, 395, 397, 399, 401, 403, 405, 407, 409, 411, 413, 415, 417, 419, 421, 423, 425, 427, 429, 431, 433, 435, 437, 439, 441, 443, 445, 447, 449, 451, 453, 455, 457, 459, 461, 463, 465, 467, 469, 471, 473, 475, 477, 479, 481, 483, 485, 487, 489, 491, 493, 495, 497, 499, 501, 503, 505, 507, 509, 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PRIMARY HEADSHIPS

continued

MERTON
LONDON BOROUGH OF
MERTON
EDUCATION COMMITTEE
MERTON PRIMARY
SCHOOL
London Road, Morden,
Surrey SM4 3PQ
Age Range: 3-5 years
No. on Roll: 146
Required: September
1985. A HEADTEACHER for
this Group 3 Primary School
which takes children from 3/9
years.
CLOSING DATE: 22nd
March 1985.
Application forms and
further particulars of the
post are available from the
Director of Education, Crown
Road, Morden, Surrey SM4 3PQ.
Applications should be sent to
the Director of Education, Crown
Road, Morden, Surrey SM4 3PQ.
Closing date: 22nd March 1985.

EDUCATION DEPARTMENT GILLINGHAM DIVISION Hempstead County Primary Infants School Group 4

(subject to review April 1985)

Appointment of

HEAD TEACHER

Appointment to take effect from 1st September 1985.

Application form and further details available from the Division Education Officer, Municipal Buildings, Gillingham. SAE please to whom they should be returned by 22nd March 1985.

Re-advertisement - previous applicants will automatically be re-considered.

KENT COUNTY COUNCIL

NORTHAMPTONSHIRE BODDINGTON C.E. PRIMARY SCHOOL Daventry, Northants. NN11 6DL

**APPOINTMENT OF HEAD
TEACHER, GROUP 2**
Required for September
1985. Experienced teacher
as Head of this rural prim-
ary school situated in the
South-West of the County
on the border of Warwick-
shire. Number on roll at
present - 87.
Closing date - 15th
March.

Details and forms
(a.s.e.) available from the
County Education Officer
(Ref. N41), Northampton
House, Northampton NN1
2EX. (40163) 110010

KENT COUNTY COUNCIL EDUCATION DEPARTMENT DARTFORD DIVISION KINGSLEY PRIMARY SCHOOL Barnard Road, Greenhithe DA3 5BB

**APPOINTMENT OF HEAD
TEACHER, GROUP 2**
Group 4 Roll 304
Appointment to take effect
from September 1985.
Applicants should be
further details available from
the Divisional Education
Officer, Kingsley Road,
Dartford, Kent DA1 3AZ (see
above) or to the County
Education Officer, 15 St. John's
Square, Maidstone, Kent ME1
4JQ. Closing date: 15th March 1985.

**TONBRIDGE AND MALLING
DIVISION
EAST PECKHAM COUNTY
PRIMARY SCHOOL
Round Road, East Peckham,
Tonbridge TN11 5LE
APPOINTMENT OF HEAD
TEACHER
Group 5 Roll 295 (Spring
Term 1985)
Required for September
1985.**

Application form and
further details available from
the Divisional Education
Officer, 15 St. John's
Square, Maidstone, Kent ME1
4JQ. (SAE please) to whom
they should be returned by
15th March 1985.

**SLADE COUNTY PRIMARY
SCHOOL
118
APPOINTMENT OF HEAD
TEACHER
Group 5 Roll 290 (Spring
Term 1985)
Required for September
1985.**

Application form and
further details available from
the Divisional Education
Officer, 15 St. John's
Square, Maidstone, Kent ME1
4JQ. (SAE please) to whom
they should be returned by
15th March 1985.

**SHEPWAY DIVISION
SLAM C.E. (AIDED)
PRIMARY SCHOOL
Elham, Canterbury, Kent CT4
6TJ
APPOINTMENT OF HEAD
TEACHER
The 11 Roll subject to
review April 1985. Roll at
present 11. Appointment to
take effect from September
1985.**

Application form and
further details available from
the Divisional Education
Officer, 15 St. John's
Square, Maidstone, Kent ME1
4JQ. (SAE please) to whom
they should be returned by
15th March 1985.

Re-advertisement: previous
applicants will be re-considered.
(40466) 110010

NORTH YORKSHIRE COUNTY COUNCIL

Applications are invited from
suitably qualified and experi-
enced teachers for the follow-
ing Headship posts. Ap-
plicants should be returned to
the County Education Officer,
SNAPE COUNTY PRIMARY
SCHOOL,
118
APPOINTMENT OF HEAD
TEACHER
The 11 Roll subject to
review April 1985. Roll at
present 11. Appointment to
take effect from September
1985.

Application form and
further details available from
the Divisional Education
Officer, 15 St. John's
Square, Maidstone, Kent ME1
4JQ. (SAE please) to whom
they should be returned by
15th March 1985.

Re-advertisement: previous
applicants will be re-considered.
(40466) 110010

Application form and
further details available from
the Divisional Education
Officer, 15 St. John's
Square, Maidstone, Kent ME1
4JQ. (SAE please) to whom
they should be returned by
15th March 1985.

Re-advertisement: previous
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(40466) 110010

Application form and
further details available from
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4JQ. (SAE please) to whom
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15th March 1985.

Re-advertisement: previous
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(40466) 110010

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Re-advertisement: previous
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(40466) 110010

Application form and
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Re-advertisement: previous
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(40466) 110010

Application form and
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Re-advertisement: previous
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(40466) 110010

Application form and
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Officer, 15 St. John's
Square, Maidstone, Kent ME1
4JQ. (SAE please) to whom
they should be returned by
15th March 1985.

Re-advertisement: previous
applicants will be re-considered.
(40466) 110010

REDDBRIDGE LONDON BOROUGH OF REDDBRIDGE 88, PETER AND PAUL'S ROMAN CATHOLIC (AIDED) PRIMARY SCHOOL

HEADTEACHER
The Governors are seek-
ing to appoint a practising
and committed Roman
Catholic with appropriate
qualifications and experi-
ence in Primary education.

The vacancy is created
by the amalgamation of
the existing S. Peter and
Paul's Junior and Infant
Schools in a new building
now under construction.

The post is payable from
1 September 1985.
The salary is £11,000
Group 5 and the number
on roll is approximately
150.

Application forms and
further details are obtain-
able from the Director of
Education, 255 High Road,
Ilford, Essex, IG1 1JN.
Closing date: 15th March 1985.
(29192) 110010

**RICHMOND
UPON THAMES
LONDON BOROUGH OF
RICHMOND UPON
THAMES**

**ST. JOHN THE BAPTIST
C. OF E. JUNIOR
SCHOOL**
Lower Teddington Road,
Richmond, Surrey KT1
4HQ

**HEADTEACHER (GROUP
4) plus 1st Junior London
Allowance**

Applications are invited
for a Headteacher to com-
mence in September 1985.
Group 4 two form entry
unstreamlined school in
pleasant surroundings.

Applicants should be
committed Christians, pre-
ferably Church of Eng-
land.

Application forms and
further details (a.s.e.) can be
obtained from the Director
of Education, Regal House,
London TW1 2JQ. They
should be returned to the
Chairman of Governors at
St. John the Baptist C.E. School
on Friday 15th March 1985.
(29254) 110010

Application forms and
further details (a.s.e.) can be
obtained from the Director
of Education, Regal House,
London TW1 2JQ. They
should be returned to the
Chairman of Governors at
St. John the Baptist C.E. School
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(29254) 110010

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Chairman of Governors at
St. John the Baptist C.E. School
on Friday 15th March 1985.
(29254) 110010

Deputy Headships Second Masters/ Mistresses

AVON COUNTY TWEENTON-ON-AVON COUNTY INFANTS SCHOOL Poolmead Road, Twerton Bath BA3 1QR

Required from 1st September
1985. Deputy Head (Group
4). A suitably experienced
and enthusiastic teacher
with a particular interest
in Mathematics and Science
particularly preferred.

Letters of application to
the Headteacher immediately
giving full C.V. and names of
two referees enclosing an
equal opportunity form.
(40104) 110012

**BUCKINGHAMSHIRE
COUNTY COUNCIL
An Equal Opportunity
Employer
MIDNORTH COUNTY FIRST
SCHOOL
Rheep Street, Winslow,
Buckinghamshire, MK18 3PQ
(Roll: 153 pupils aged
4-11)**

Applications are invited from
experienced primary teachers
for the post of DEPUTY
HEAD in this rural school.
The successful candidate
would be expected to have
a keen interest in language
development through the
medium of English. A knowledge of
any music or drama is not
essential.

Application form and
further details (a.s.e.) can be
obtained from the Area
Education Officer, 5
Bucks. HF20 1UH, CLOVE
DATE: 15 March 1985.
(29302) 110010

**BERKSHIRE
HAWKEDON PRIMARY
SCHOOL
Hawkedon Way, Lower
Earley, Reading, Berks.
RG2 9AT (extending to
240)**

Required April/September
1985. Deputy Head Teacher. Group
4. As soon as successful
applicant is appointed, com-
mitment allow for this new
Group 4 primary school on
the Lower Earley Housing
Development.

Application form and
further details from the
Headteacher (a.s.e. please).
Closing date: 15th March
1985. AN EQUAL OPPORTU-
NITY EMPLOYER. 110012

**BERKSHIRE
WHITE WALTHAM C.E.
(CONTROLLED) PRIMARY
SCHOOL
Waltham Road, White
Waltham, Maidenhead,
Berks. SL6 1JQ**

Required for September
1985. HEAD
TEACHER for this Group 4
School. Group 4. Head-
teacher of Studies and Science Cur-
riculum and Studies.

Application form and
further details available from
the Headteacher (a.s.e.)
Closing Date: 20.3.1985.
An Equal Opportunity Em-
ployer. (34660) 110012

**CAMBRIDGESHIRE
(Equal Opportunity Employer)
ST. MARKS INFANT
SCHOOL
Trafford Road, Wisbech,
Cambs. PE13 3JG
Tel: Wisbech 54887
Head Teacher: Mrs A.M.
Harwin, B.Sc.
Required for September
1985. Application by
invitation from experienced
Deputy Headship of a
Group 4 Infant/Young
School.**

Flexibility and enthus-
iasm essential.
Further details and a
pattern form available from
the Head Teacher (a.s.e. please).
Closing date: 15th
March, 1985. (49701) 110012

**BERKSHIRE
WHITE WALTHAM C.E.
(CONTROLLED) PRIMARY
SCHOOL
Waltham Road, White
Waltham, Maidenhead,
Berks. SL6 1JQ**

Required for September
1985. HEAD
TEACHER for this Group 4
School. Group 4. Head-
teacher of Studies and Science Cur-
riculum and Studies.

Application form and
further details available from
the Headteacher (a.s.e.)
Closing Date: 20.3.1985.
An Equal Opportunity Em-
ployer. (34660) 110012

**CAMBRIDGESHIRE
(Equal Opportunity Employer)
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SCHOOL
Trafford Road, Wisbech,
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Tel: Wisbech 54887
Head Teacher: Mrs A.M.
Harwin, B.Sc.
Required for September
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School.**

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Closing date: 15th
March, 1985. (49701) 110012

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(CONTROLLED) PRIMARY
SCHOOL
Waltham Road, White
Waltham, Maidenhead,
Berks. SL6 1JQ**

Required for September
1985. HEAD
TEACHER for this Group 4
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Application form and
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Closing Date: 20.3.1985.
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ployer. (34660) 110012

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Closing date: 15th
March, 1985. (49701) 110012

**BERKSHIRE
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(CONTROLLED) PRIMARY
SCHOOL
Waltham Road, White
Waltham, Maidenhead,
Berks. SL6 1JQ**

Required for September
1985. HEAD
TEACHER for this Group 4
School. Group 4. Head-
teacher of Studies and Science Cur-
riculum and Studies.

Application form and
further details available from
the Headteacher (a.s.e.)
Closing Date: 20.3.1985.
An Equal Opportunity Em-
ployer. (34660) 110012

**CAMBRIDGESHIRE
(Equal Opportunity Employer)
ST. MARKS INFANT
SCHOOL
Trafford Road, Wisbech,
Cambs. PE13 3JG
Tel: Wisbech 54887
Head Teacher: Mrs A.M.
Harwin, B.Sc.
Required for September
1985. Application by
invitation from experienced
Deputy Headship of a
Group 4 Infant/Young
School.**

EXTRA COMPUTERS IN EDUCATION



Good practice?

Chris Schenk looks at the impact of micros on primary schools

Over the last two years, largely as a result of the DoI offer to primary schools, there has been a major change in primary education, implemented with unprecedented speed. Educational innovations often take twenty five years to permeate through the system; computers have swept into nearly all primary schools in about as many months.

For some people the purpose of the DoI scheme has already been achieved. Few schools have resisted the chance to acquire a half-price micro, to most British children will have the opportunity to use a computer, in one way or another, before the age of eleven. If the aim of the scheme is just to familiarize the next generation of the British work force with some aspects of the new technology, and to attempt to overcome fears and phobias about computers, then the success of the DoI initiative is more or less assured.

However, if the reason for having computers in primary schools is to improve the quality of young children's education, then the success or failure of the scheme cannot yet be assessed. It is clear from what is going on in some schools, that computers can be used effectively and imaginatively, as a further resource for teachers when creating a stimulating environment in which young children can learn. It is not yet clear whether teachers who are less confident or less enthusiastic about computers will be able to achieve the same results. They will certainly need support - and time - to do so.

The last two years have seen much more than just the introduction of a great deal of hardware. Educational software for the DoI machines, and particularly for the BBC, has increased greatly in quantity - and slightly in overall quality. In 1982 a computer adviser estimated that 80 per cent of the educational programs available were garbage. The proportion today must remain about the same. However, the 20 per cent that are not garbage include some programs with a tremendous amount of potential in the hands of a good teacher.

No software is teacher-proof. In the end a computer program, like any other educational resource, relies on the skills and sensitivity of the teacher for its effect. Teachers in some primary schools have managed to achieve results over the past two years which ought to be the envy of their colleagues in the secondary sector, who have had the opportunity to use computers for the longer. Primary school teachers have managed to achieve results which ought to be the envy of their colleagues in the secondary sector, who have had the opportunity to use computers for the longer.

There are literally hundreds of small programs that can be used in this way. Many of them involve the children in practicing particular skills. The ones which do so in the context of a game of strategy, or of a problem to be solved, have far more educational potential than those which merely drill and test. There is a great temptation to acquire as many of these small programs as possible, but this can be counter-productive. Even when the programs are carefully indexed and cross-referenced to other teaching materials, the limiting factor is the teacher's capacity to be sufficiently familiar with each program to use it effectively. Computer memories are rapidly growing in size; human memory remains the same.

With careful planning small programs can be used effectively despite the limitations of a time-tabled computer shared between a number of classes. Even when using small programs, a time-table that leaves the computer in the same place for a day or even a week allows much more to be achieved than one which moves the computer after every lesson. Some other ways of using a computer only become possible for a much longer period of time. This can be achieved either by buying more computer systems or by abandoning any attempt to give fair shares to all.

In some schools exciting work has arisen from the use of simulations or adventure games. The chance for children to explore an imaginary world, whether it is based on fact or fiction, is something that the

computer can offer in a way that is not easily replicated by other means. Good teachers have harnessed the involvement and interest which a computer program, like *Adventure Island* or *Grimm's Garden*, has stimulated, and made the most of the educational opportunities that have arisen. The teaching skills necessary to make good use of these programs are not fundamentally different from those required to develop project work from any other focus of interest, such as a visit, or a television programme.

Software of this sort cannot be treated in isolation. To develop a project successfully teachers need not only the support of a computer program but access to books, artefacts, pictures and visits, and ideas for ways of extending their children's work. Perhaps in the near future library services and museum services will include relevant software for loan alongside other resources. At the moment there are two barriers to doing this. The first is that the number of really good programs of this type is still very small. The second is the constraints that some publishers put on the loan of their software. It is high time they abandoned these constraints.

Another important way in which primary schools have been exploiting the educational potential of the computer is by using information retrieval programs. Scientific, historical and environmental project work has been significantly extended and enhanced by using the computer to handle large amounts of data. Children have created data files from their own observations and experiments, as well as from primary sources such as census returns or parish records. Once the data file is created, children can interrogate it, to test out hypotheses and make connections between different variables. In this kind of work, the computer is a means to an end. It is a tool that takes the drudgery out of sifting through evidence.

In the days before the DoI scheme, when computers in primary schools were few and far between, many teachers felt that it was important for them to learn how to program, and to pass on this knowledge to the children they taught. The pendulum swung away from programming in primary schools, but there is beginning to be a swing back towards it again. The world of the turtle has provided an environment in which teachers and children can write procedures in order to solve problems of their own devising.

The fact that in using Logo or a turtle graphics package, children are

beginning to program, is not of central importance. Nor is it vital which particular software is used. As always, the skill of the teacher is paramount. A good teacher with the sensitivity to know when to intervene and when to refrain from interfering, can get far more educational value from a limited turtle graphics package, than an indifferent teacher will ever manage to extract from a full Logo.

As well as the geometrical investigations made possible by the turtle, some schools are also using programming, whether in Basic or Logo, to investigate number patterns and to explore simple simulations. The point of introducing programming to primary children is not to teach them how to spread; it is to allow them to learn mathematics in an exploratory way through programming. In the same way, wordprocessing has a place in the primary school, not so that children can be taught about it, but so that they can communicate in writing more effectively, and experiment with different ways of expressing their thoughts. For this to happen the wordprocessor has to become as natural a tool to the child as a pencil or a pen. Only sustained use of a word processor over a period of time can bring this about.

The versatility of the computer can sometimes be rather daunting. The five ways of using the computer that I have written about are all very different and demand different skills from the teacher. Most schools that have made effective use of computers have specialized to some degree in a particular application. The good practice that is already apparent is far more likely to spread if other teachers and other schools are able to specialize, at least for the time being. To attempt to cover all the interesting uses of the computer would be at best to skim the surface and at worst to invite disaster.

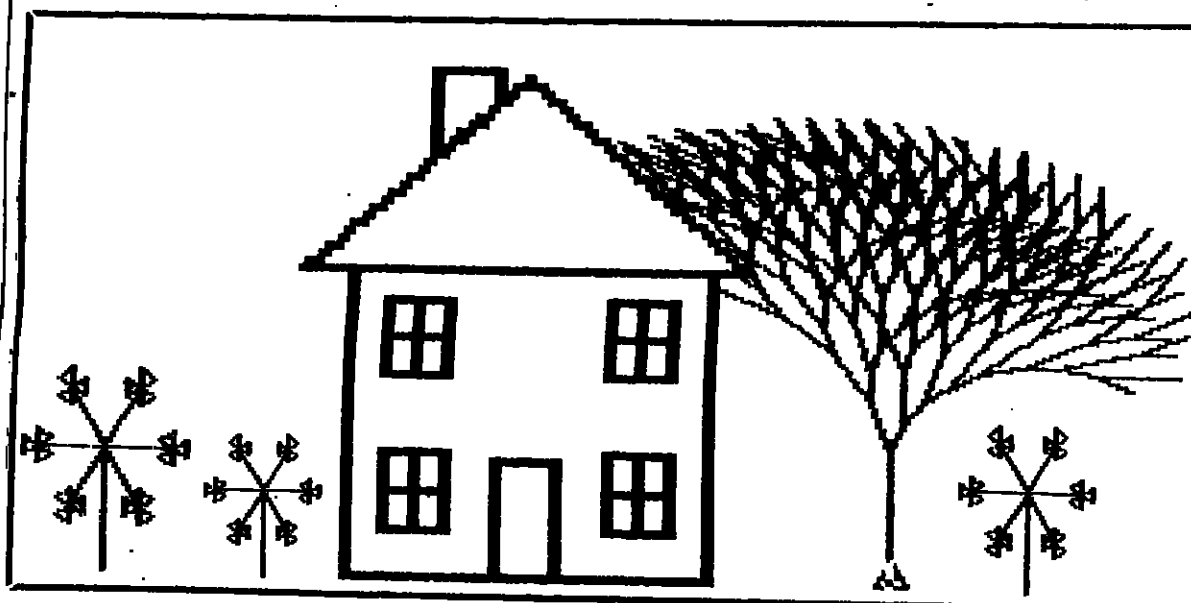
THIS WEEK

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Computer studies 39

EXTRA

LOGO: SURVEY

Over the next three pages Richard Noss, Julian Pixton and John Wood assess some of the principal versions of Logo



Identifying the positive and negative attributes of a computer programming language is notoriously controversial and subjective. Rightly so; there is sufficient evidence that features of computer languages affect their facility to be learnt and used effectively to program computers. We are only concerned here with implementations of one language, Logo, so it is reasonable to expect that they will have a strong family resemblance and that we are considering relatively small differences in their features. But the differences do exist, perhaps because of limitations of the target hardware, varying expertise of the author(s) or their desire to develop the language. Because Logo is designed to be used by such a wide range of program users, from young novices to experienced adults, it is our aim to identify the differences between the various implementations which we feel are important to the various categories of user.

Obviously, the decision as to which versions are best is largely a subjective one and, consequently, one which must be taken by the individual user. However, there are two things which we propose to do in this article which we hope will help would-be Logo programmers. First, we suggest some criteria by which different implementations may be judged; second we offer some factual information on each implementation.

In this latter category we include a comparison of speed of implementations. Later in the article we include some speed benchmarks which indicate that these implementations differ quite substantially in this respect. To some users speed will be very important and it has been possible to assemble this information in the time-scale available and produce quantitative results.

While speed is not the only criterion by which an implementation should be judged, it is an important one. It does not matter if the time taken to draw a spiral differs by a few seconds, but as the table of speed benchmarks shows (see opposite), some implementations

vary by a factor of three or four. In such cases, it can get rather tedious – to say the least – waiting for a program to run. More importantly, for any serious programming application – for example, designing new “microworlds” for children to use and explore – speed is essential. Incidentally, in a full Logo which allows for the redefinition of primitives, there is never any problem slowing things down; for example, a slow version of FORWARD could be redefined as:

REPEAT: AMOUNT [FORWARD 1]
But there are other, less readily

quantifiable, features of implementations which are at least as varied as their speeds and may be much more important to their prospective users. Logo has received attention because of its success with young learners, but it is increasingly being used by more advanced programmers because it provides such a high level programming environment. Indeed, experience suggests that “young learners” seem rapidly to become “advanced programmers” when using Logo. These two extremes demand attention to two aspects of the language where these implementations do differ widely.

Debugging

Error messages must be informative as to the nature and “position” of the error. The ability to trace execution and/or variable assignments is helpful.

Consistency of Syntax

Internal rules should be simple and clear, and there should be as few exceptions to them as possible. It is not always helpful to use parameters to qualitatively alter the action of a built-in “primitive”, or to have primitives demand more than three or four parameters. As far as possible the meaning of an individual word or statement should be independent of the context in which it occurs. In addition, redundant words to aid “legibility”, such as AND introduce inconsistencies which seem to be unhelpful. The actual words chosen for primitives – reserved words – should be meaningful, with as little arbitrariness as possible.

The first involves the accessibility of the language to novices young and old. One of the primary considerations in the development of Logo from Lisp some twenty years ago was to provide a language which offered a viable entry-point for inexperienced programmers. The second aspect concerns the power which the language offers to the programmer. In terms of providing control over as wide a range of programming activities as possible, at a high level.

The history of programming language design has been dominated by examples in which one aspect, either power or access, has been sacrificed in the interest of the other. In addition, some attempts at providing an accessible language have resulted in languages which are internally inconsistent. In such cases, rapid initial progress is often followed by a period of subsequent learning. In contrast, the history of Logo revolves around the attempt to reconcile accessibility and power without compromising its consistency.

So, what aspects and features of Logo implementations contribute to their accessibility?

ACCESSIBILITY

Entry Routes

For most of Logo's history, Turtle graphics has provided an entry route for novices to explore programming. The Turtle generates environments in which to explore and pose problems and expose bugs in a way which is both attractive and meaningful. More recently, the introduction of micro versions of other environments, for example Sprites, Music, and the Control of external objects, has raised the possibility of alternative introductory environments, as well as new applications for advanced programming.

Editor

An essential feature of Logo is the ability to modify and build independent procedures and to link them. Such an approach is designed to encourage an exploratory “bottom up” style as much as a planned “top down” one. In both cases, the existence of a built-in editor is essential. The requirements of the editor are essentially those which one would demand from a word processor: the power to insert, delete, modify, and merge existing “text”. It is reasonable to demand an editor as close to a word processor as possible.

Primitives

It should be possible to “relabel” the primitive commands, and it is desirable that they should have clear self-explanatory, consistent full names. The highest level of program control primitives, such as conditionals, is desirable as this is an area of great conceptual difficulty. Although the features of particular machines, such as access over the operating system, should be available through Logo, such involvement with systems other than the Logo language (eg a text editor, or calls to the operating system) should not be necessary.

Startup and Workspace Management
This is full of conceptual and practical problems which need to be carefully tackled. Logo should provide accessible and flexible control over the way in which procedures and variables are organized, accessed, and filed. Again, the user should only need to deal with one language – Logo.

POWER

The factors which pertain to the power of an implementation are related to those concerning access above in two ways. Clearly, the most experienced, advanced programmer we can imagine will still need to edit and debug her procedures. Also, the power of the language may be used to construct microworlds or simpler programming environments for novices. We would suggest the following list of factors to consider:

Speed

Implementations vary greatly from one machine to another and between different implementations on the same machine. In addition, the speed of an implementation may vary considerably depending on the particular programming task (graphics, list-processing, etc). Logo's dependence on recursive list processing makes speed an important factor, even when the user may not appear to be involved directly with sophisticated aspects of this kind. Predictable, consistent, garbage collection is essential.

Space

Data, procedures and the recursive stack eat up Logo “nodes” (the Logo units of storage space); yet the simplest form of Logo programming is to accumulate all one's tried and tested procedures in the current workspace. In part this is a function of the size (or lack of it) of the machine, although here again implementations on a given machine differ.

Debugging

This is a case where power and access ought to coincide. Helpful error messages and a full screen word processor-style editor are essential.

Editor

Logo editors tend not to be as powerful as the word processors mentioned above. It is therefore helpful if procedures are stored in a standard format so that an editor can be used for major alterations. Storing Logo procedures on disk using a standard ASCII format has the additional advantage that it (a) removes the mystery associated with internal codes and (b) aids transfer between versions, even on different machines.

Syntactical Consistency

Some versions of Logo offer syntactical inconsistencies to aid novice programmers. An example is allowing the omission of punctuation in title lines (TO SQUARE rather than TO “SQUARE”, or the provision of implicit arithmetic operators). It is desirable that consistent syntactical structure is allowed even if it is not mandatory.

Workspace Management

Versions vary quite widely in the flexibility with which the program can control and manipulate procedures and variables within the workspace. Being a language designed to encourage a modular approach which generates large numbers of separate components, a flexible workspace management system is a necessity.

File Handling

There are Logos that can access sequential and random access data files, which obviously increases the range of applications possible.

Language Richness

A wide range of primitives is useful, subject to the constraints of consistency. In general, provided that consistency is not sacrificed, a wide range of primitives is an advantage, despite the possibility of defining new primitives in terms of old ones. The claim that “there is no need to provide this as a primitive – the user can always define it herself” is often an excuse for lack of space.

Dynamic Procedure Modification
The ability to work on the list which incorporates a procedure definition is an important Logo technique. For example:

PRINT TEXT “SQUARE
would return something like
[[FD 50] [RT 90] [FD 50] [RT 90] [FD 50] [RT 90] [FD 50] [RT 90]]
This is a list with eight sub-lists in it. This list looks rather esoteric, but it is in fact extremely powerful. It is the facility to design programs which themselves operate on other programs (ie to use programs as data), which gives Logo its flexibility and power. It is unlikely that a novice programmer would stumble on such a facility by accident, but it is more than likely that her teacher or a more advanced student would use it to design a “microworld”.

Access the Computer Operating System

This must be possible even from within a procedure. Ideally, common OS functions and results should work with standard Logo data types. A CATALOG yield a list rather than the usual screen side effect; the common ones are normally duplicated by a Logo primitive which does so.

Hooks

This term covers the facilities for incorporating machine code segments into Logo either to build new primitives or to append code to existing ones, for example to control external devices like turtles or track balls. This needs to be easy, safe and unrestricted.

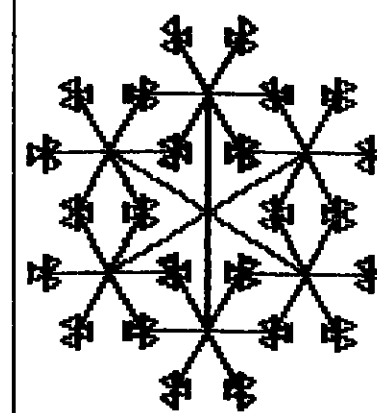
SURVEY 2

LOGO: TESTS
on next page

EXTRA

SURVEY 2

LOGO: TESTS



TO SUPERFLOWER

In this section five benchmarks (tests against which each version of Logo can be judged) will be considered. While the primary purpose of these is to compare the relative speeds of different implementations, the benchmarks have been chosen to represent a wide range of Logo based programming techniques. The major consideration has been speed; it has not been possible to test how effectively the different versions use the sometimes limited memory available.

One important aspect which distinguishes the different versions discussed below is the different syntax involved. Simply defining a procedure is a highly non-standard activity, which may consist of any of the following:

TO SQUARE :SIDE
BUILD “SQUARE “SIDE
TO SQUARE SIDE
TO “SQUARE SIDE

In other cases, syntactical differences imply a rather different version of the “story”, or internal model which it is desirable for the programmer to hold. For example EDIT “SQUARE (SQUARE is the name of a procedure), or EDIT SQUARE (procedures are always unnamed). Not all of these differences are of academic interest only: some affect the generalizability of the early learner's conceptual framework, while others may entail an entirely different approach to the solution of a given problem.

The Benchmarks

1 SUPERFLOWER illustrates the modularity of the language and entails six levels of subprocedures. Note that there are no inputs in any of the procedures.

2 HOUSES was written by Paul Andrews, aged eleven. It is not entirely elegant, but it illustrates well the way in which Logo procedures pass local parameters to each other.

3 WILLOW is based on the famous recursive tree in Harlow Abelson and Andy DiSessa's book – *Turtle Geometry*. It is recursive in the full (ie not tail) sense, in that the branches of the tree continually wind up and down the procedure.

4 BE (or not TO BE) illustrates the recursive processing of a list, by reversing part of a rather well known speech. SIEVE is a program which generates lists of prime numbers by recursively discarding those which have any factors.

In this article, there is not enough space to give the full print-out of each of the five benchmarks, including an example of how syntaxes differ between some implementations. (A fuller report of this evidence has been commissioned by MEP – the Microelectronics Education Programme). Instead, three benchmark programs will be given in full (SUPERFLOWER, WILLOW, and BE), while HOUSES and



TO HOUSE

Logo Time-trials

	SUPERFLOWER	HOUSES	WILLOW	BE	SIEVE 50
Amstrad CPC 464	192	200	595	17	%
Apple II c/e	32	41	91	17	15
Atari 800XL	47	33	137	16	16
BBC Acornsoft	64	82	195	55	50
BBC Logotron (LCST)	42	49	123	9	18
BBC LSL	85	84	206	*	*
BBC OU	182	209	441	25	34
Commodore 64	52	90	140	19	19
RML (480Z)	75	89	333	106	Out of space
Spectrum (48K)	61	85	200	37	Out of space

All times are in seconds. All graphics benchmarks were tested with the turtle visible; all versions increase their drawing speed with the turtle hidden; some, like OU and RML become considerably faster.

* Both list processing tests failed to run, responding with the error “out of Logo stack space”.

** LSL Logo does not offer the IF THEN ELSE construct and was unable to accommodate procedure lines greater than 127 characters. It was therefore unable to accommodate the prime number benchmark.

** LSL Logo would not allow the construction of the 39 element HAMLET list because of the input line restriction of 127 characters. It was also unable to handle the “ ” included as punctuation in this list, due to its unorthodox syntax. Any comma incorporated in a list acted as a delimiter, with subsequently unpredictable effects upon further assignments or operations.

SIEVE will simply be represented by the output they produce.

Benchmark 1
SUPERFLOWER is a procedure which was built up in stages, as the following subprocedures show:
TO TRI
FD 10 RT 120
FD 10 RT 120 FD 10
END

TO TRI 3
REPEAT 3 [TRI]
END

TO STEM
FD 40 LT 30
TRIS
RT 30 BK 40
END

TO FLOWERTRI
RT 30
REPEAT 6 [STEM
LT 30
END

TO FLOWER
FD 70
FLOWERTRI
BK 70
END

TO SUPERFLOWER
REPEAT 6 [FLOWER RT 60]
END

Benchmark 2
HOUSES is quite a long program. There are 15 procedures in the final program, of which the “top-level” procedure is:

TO HOUSE :AMOUNT
IF :AMOUNT < 10 [STOP]
WALL :AMOUNT
ROOF :AMOUNT
WINDOW1 :AMOUNT
WINDOW2 :AMOUNT
WINDOW3 :AMOUNT
WINDOW4 :AMOUNT
DOOR :AMOUNT
ALONG TO NEXT :AMOUNT

HOUSE :AMOUNT - 10
END

Benchmark 3
WILLOW illustrates the full power of Logo's recursion. Trying to trace the individual branches can be rather mind boggling at first – try it with fewer “levels” first.

TO WILLOW
PU BK 10 PD
TREE 10 IS 8
BK 50
END

TO TREE :SIZE :ANGLE :LEVEL
IF :LEVEL = 0 [STOP]
LEFT :ANGLE
FORWARD :SIZE * 2
TREE :SIZE :ANGLE :LEVEL - 1
BACK :SIZE * 2
RIGHT :ANGLE
FORWARD :SIZE
TREE :SIZE :ANGLE :LEVEL - 1

TO BE
REPEAT 10 [PRINT REVERSE
“HAMLET]
END

BACK :SIZE
LEFT :ANGLE
END

Benchmark 4
BE takes a list, and prints out the reverse of the list ten times. In this example, the list is named HAMLET – perhaps on second thoughts it should be called TELMAH.

MAKE “HAMLET TO BE OR NOT TO BE, THAT IS THE QUESTION. WHETHER 'TIS NOBLER IN THE MIND TO SUFFER THE SLINGS AND ARROWS OF OUTRAGEOUS FORTUNE, OR TO TAKE ARMS AGAINST A SEA OF TROUBLES, AND BY OPPOSING, END THEM?

TO BE
REPEAT 10 [PRINT REVERSE
“HAMLET]
END

TO WILLOW

TO REVERSE :LIST
IF EMPTY? :LIST [OUTPUT []]
OUTPUT LPUT FIRST :LIST REVERSE BUTFIRST :LIST
END

BE THEM? END OPPOSING, BY AND TROUBLES, OF SEA A AGAINST ARMS TAKE TO OR FORTUNE, OUTRAGEOUS OF ARROWS AND SLINGS THE SUFFER TO MIND THE IN NOBLER “TIS WHETHER QUESTION THE IS THAT BE, TO NOT OR BE TO END OPPOSING, BY AND TROUBLES, OF SEA A AGAINST ARMS TAKE TO OR FORTUNE, OUTRAGEOUS OF ARROWS AND SLINGS THE SUFFER TO MIND THE IN NOBLER “TIS WHETHER QUESTION, THE IS THAT BE, TO NOT OR BE TO END so on . . .

TSIEVE 50
gives, after a longish wait (depending on the version),
23 57 11 13 17 19 23 29 31 37 41 43 47
The program is called SIEVE after a famous procedure or algorithm called the “sieve of Eratosthenes”.

SURVEY 3

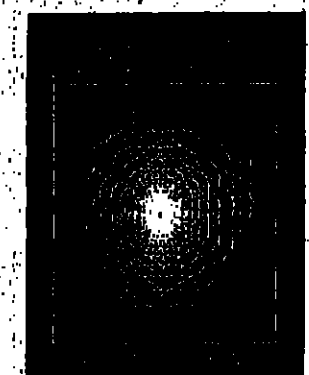
LOGO: SYSTEMS
on next page

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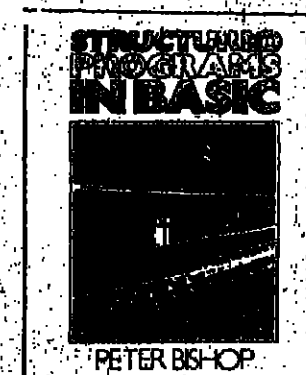
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EXTRA

SURVEY 3

LOGO: SYSTEMS

The decision on versions of Logo is not restricted to software alone. Out of the two decades in which Logo has been implemented, it is only in the last two or three years that it has been available on the microcomputers that are within the budget of the home and school user. The lack of compromise between power and accessibility inherent in the Logo philosophy has placed great strains on the effectiveness of current microcomputer implementations of the language. It will be a little while before affordable computers will be able to run versions of Logo which are genuinely capable of providing fast, efficient applications. In other words, almost all of the versions discussed in this document are themselves a compromise with the small memories and slow processors of the machines.

As far as schools are concerned, many are deciding that Logo is an activity to which they are prepared to commit at least one machine. We are therefore entering an era in which schools may be buying Logo machines rather than computers for which Logo may offer one possibility. For this reason the adjacent table provides some information, not only about the Logo implementations themselves, but also some guidelines as to the nature of the computer systems.

Amstrad CPC 464

This custom version of Digital Research's Dr Logo is provided free to all purchasers of the Amstrad disk system. Written in C, it runs rather slowly and has a number of key primitives missing. It is, however, possible to replace all the missing primitives with Logo procedures.

Good points are the full screen editor which allows groups of procedures and global variables to be easily manipulated, adherence to a reasonably standard syntax, and the inclusion of features such as property lists, error handling through CATCH and THROW, and access to a number of powerful system variables and properties.

Bad points are the slow speed of processing, the omission of a number of key primitives such as LATE and EARLY, and the lack of a full screen editor. The two recursive list processing tests to run, responding with the error "out of Logo stack space" when it clearly was not. This is a serious bug which detracts from an otherwise reasonable product.

Apple II c/e

The version which runs on the upgraded (128K) IIe and the standard

IIc is called Apple Logo II, to distinguish it from the original - now classic - Apple Logo. It is a much more powerful implementation than the original, and offers music, a full set of file-handling primitives, including random access files, and an 80-column screen editor. It is written, like the original Apple Logo, by Logo Computer Systems Inc. Apple Logo II comes with very comprehensive documentation, which provides an introduction to turtle graphics, and a well-presented reference manual covering the complete language.

Atari Logo

Atari Logo is available on a cartridge for the Atari 600 and 800 series computers. It has a very large workspace available for the user and it is fast. It is unique among micro-based Logos in that it includes multiple (4) simultaneous windows (dynamic turtles) as standard. These can be controlled by the very powerful WHEN "demons" which sit inside the computer ready to be activated WHEN their condition is true. This means that the user can write Logo lines which, translated into English, say things like: WHEN the CLOUD obscures the SUN, change SKYCOLOUR. Once this condition is set up, it will be activated whenever the CLOUD



sprite obscures the SUN sprite, without having to be run inside the program. The documentation is clear and well presented.

There are no trace facilities to aid debugging, and the music facility, although accessible, uses only two of the Atari's four channels. Also, due to the constraints of space, some key advanced primitives such as REDEF, TEXT and DEFINE have been left out of the implementation.

BBC Acornsoft

Acornsoft Logo is on two chips, and provides a very full version of the language. It is firmly based on the LCSI (Logo Computer Systems Inc) dialect, although it was written in the UK. It offers a number of features not found on genuine LCSI implementations, such as multiple turtles and an extended set of list-processing primitives. It also offers comprehensive documentation and a set of cassette-based Logo examples for the beginner and more advanced programmer to investigate.

There is a wide variety of extension materials which accompany the package, and some excellent debugging and trace facilities which are unequalled on other current micro implementations. Acornsoft Logo is, however, extremely slow, and anything other than turtle graphics can become very tedious. In addition, the fact that Logo always reserves 10K for screen memory, even when in MODE 7, cuts an already small workspace down to minuscule proportions, and makes serious applications impossible without a second processor.

BBC Logo Software Ltd

LSL Logo is on a single chip which has a WHILE primitive, and includes debugging primitives WALK and TRACE. It also incorporates a novel documentation which is comprehensive, but unfortunately full of errors.

LSL Logo's editor is not a word-processor style full screen-editor (unlike the others reviewed in this article), and it is unable to manipulate lists or to handle groups of procedures. It is not possible to save a workspace or group of procedures as a file (instead, each procedure needs to be individually SAVED), and it is difficult to save variables. Two non-standard and problematic features of the implementation are the use of commas to separate multiple statements on a command line, and the use of any style of brackets to delimit lists (which rules out their use as a way of facilitating readability). The PRINT primitive does not supply a carriage return (to get one, one has to employ the RPRINT primitive). Other problems are an incomplete set of error messages, an ineffective garbage collector, a turtle shape which is badly skewed in MODES 2 or 5 when heading 1 degree (but not when heading 0 degree), and the fact that it is possible to overwrite the text window using the XMARGIN and YMARGIN primitives and thus destroy the screen turtle.

BBC Logotron

Logotron Logo is a fast and very efficient LCSI implementation on a single chip, which boasts an editor with an automatic search and replace facility. It incorporates a new and powerful "USE" command which provides a "clean" interface for building extensions to the language - a new departure for LCSI Logos. A prototype "sprites" hardware extension exists, which, when released, will add 32 sprites to Logo; a further extension will include the facility to read and write data files.

LCSI have redesigned their workspace management primitives for Logotron Logo, and have incorporated file handling facilities - an important addition. The implementation has omitted a number of primitives due to pressure of space, and relies on the BBC's operating system commands for all disk access. The space constraint has also led to the omission of some whole words for which only abbreviations are allowed, although the relatively large available workspace offers the opportunity to reinstate the most important of these. Logotron Logo comes with clear documentation, which usually introduces list processing ideas as well as the usual turtle graphics introduction.

BBC Open University

The OU version has an excellent reference documentation and a beginners' tutorial manual. It also offers a wider than usual range of control primitives which include the CASE command, and a very fast and powerful flood fill feature, accessed through the PAINT command, which allows closed regions to be filled with colour. A weak point is the editor, which only allows one procedure at a time to be manipulated and does not handle variables.

OU Logo is on two chips, and offers multiple turtles. It is, however, extremely slow in its graphics plotting. It is a non-standard implementation which has abolished the colon to denote the value of a variable, thus blurring the distinction between variables and procedures. This last characteristic marks OU Logo as a departure from other implementations and necessitates a readjustment of the model or "story" which programmers need to keep track of what is happening. It may also limit the applicability of the growing range of Logo literature.

Commodore 64

Commodore Logo was produced by Terrapin Inc, who - like LCSI - have been associated with micro implementations of Logo from the beginning. The syntax differs slightly, most noticeably in the "quoting" of procedure names. For example, Commodore Logo requires

EDIT SQUARE
rather than the more conventional
EDIT "SQUARE"

All procedure definition takes place within the editor. One very convenient facility is the ability to switch between full graphics screen, mixed graphics and text, and full text screen; each is accessed by simply pressing one of the three function keys. Commodore Logo also allows the loading (from disk) of a music extension, and software-driven sprites which are effectively multiple turtles. Commodore Logo documentation is packaged with a densely written manual which is not always easy to use.

RML 480Z

Written at the Artificial Intelligence Lab of the University of Edinburgh, RML Logo is a full implementation which differs somewhat from the American dialects.

It is highly consistent, but it does not adopt a list-based structure for its conditional or repeat statements. Similarly, it is not possible to output a procedure as a list in order to modify it. The turtle consists of an arrow, which draws rather slowly and disappears when in FAST mode. RML Logo demands considerable sophistication from the user wishing to create a startup file; this requires a text editor. RML Logo's documentation, while comprehensive, has been criticized for its lack of clarity and poor layout.

Spectrum

Spectrum Logo is a no-frills LCSI implementation which offers a more-or-less standard LCSI documentation. All keywords are entered in the usual way - BASIC-style one-press keys have been overridden. With one exception, the user never has to press more than two keys to enter a character; the exception is leaving the editor, which involves going into "extended" mode and then pressing C. The auto-repeat facility is not controllable by the programmer, and is irritatingly fast. Other minor irritations are the way error messages wait for a keypress before handing back control, and the small text window. Spectrum Logo is on a cassette which loads surprisingly fast and can, with a minimum of effort, be copied onto a microdrive tape. A feature of the implementation is the access it offers to the outside world via the idiosyncratic but expressive STARTROBOT command.

Richard Noss is a lecturer in Mathematics Education at the University of London Institute of Education. Julian Pison is a director of the Walsall Logo Project.

John Ward is a lecturer in the Microschools Project at the Open University. The authors have between them been involved, to a greater or lesser extent, with the specification or documentation of the following Logo implementations: Atari, Acornsoft Logotron, BBC, Commodore, LCSI, LSL, Logotron, RML, Spectrum, Terrapin, and the University of Exeter.

EXTRA

Observing data

Chris Brankin and John Dunkerton on interfacing in science

It is some time since Illich suggested that people acquire most of their skills and knowledge outside school and that school education bears little relation to the real world outside. Yet, even in this technological age, with schools possessing the capability for micro-electronics and computing, the same dangers exist. Is some of this new technology being used inappropriately; confusing the student as to its real usefulness outside the school environment? Anne Glynn-Jones has recently pointed out that there is a great deal of difference between using a computer as an educational tool in schools and actually preparing pupils for a computer permeated world.

In the area of science, for example, there are a great many software packages available which seem to have been written to simulate quite standard experiments. Certainly no one doubts the validity of computer simulations in certain circumstances but it could be argued that an over-indulgence in simulations is simply computing for computing's sake. How much more valuable to the student if computers are seen not to be simply simulating the outside world, but actually interacting with it!

Computer assisted learning via simulations, it is said, both saves on resources and increases the motivation of the students. Yet interfacing to a computer need not be a drain on resources and can in fact be just the opposite while the thrill of capturing and observing data as it happens surely leaves the simulation approach far behind in terms of motivation.

Interfacing is the process whereby data/information from an external source is fed to the computer in a form which it can recognize and therefore handle. Sophisticated hardware and software can be bought from the usual laboratory suppliers (at a price), but for those schools possessing a BBC Model B the hardware need be nothing more than a few wires, plugs and sockets while a few lines of BBC BASIC is all the software necessary. The inbuilt Analogue to Digital Converter (ADC) allows up to four externally varying voltages in the range of 0 to 1.8 volts to be monitored and stored as a series of digital values in the computer's memory. All that is needed is a suitable plug for the ADC socket at the rear of the BBC Micro. Solder leads to the four input pins and the 0 volt/earth pin and any physical quantity which can be converted to a voltage (by means of a suitable transducer) can now be monitored automatically. Connect the transducer between one of the input leads and the 0 volt/earth lead, type in a few lines of program (see fig 2) and whatever quantity is being measured will be displayed on the screen as a function of time.

A few words of explanation. In BBC BASIC, the function ADVAL(1) in line 80 returns a whole number in the range 0 to 65520 as the input in ADC Channel 1 varies from 0 to 1.8 volts. The function TIME in lines 50 and 90 counts in 100ths of a second. The scale factors in lines 20 and 40 allow the PLOT function in line 100 to use most of the monitor's screen to display the data. Colour, sound and calibration of axes can easily be programmed in later to produce a more stimulating effect.

You now have an extremely versatile chart recorder. The biologists can, for example, plug in one of the movement or pressure sensors that are now available to record plant growth, sperm movement or lung pressure. The chemists can display pH or conductivity and the physicists can capture temperature changes, light intensity or magnetic field. As an example of monitoring two inputs simultaneously the voltage/current characteristics of electronic components could be displayed, and it is surprising what subtle changes can be discovered using even this simple approach. Consider, for instance, the voltage/current characteristics of a torch bulb: shown as the voltage is first increased and then decreased. How many simulations could have foreseen this difference?

This is only a start. A recent series of articles in *Everyday Electronics* contained valuable information on many micro-processor interfacing techniques, digital input/output ports for control and timing, faster analogue to digital

conversions and suitable amplifiers for physiological measurements, all of which we have found extremely useful and inexpensive to build. One example from this series is Electrocardiography. The sixth form are now able to monitor the electrical activity of the heart and lower down the school, this new addition to heart teaching has certainly made the topic much more exciting for the pupils. An example is shown in fig 1.

Although computer simulations do indeed have a role to play, there seems to be a growing awareness of the importance of interfacing. Our local BBC user's group, set up as part of the Secondary Science Curriculum Review, has become involved in interfacing using this simple approach at very little cost. This more realistic appreciation of the role of computers in a technological age should be encouraged.

References

Anne Glynn-Jones, *Job Skills in the Computer Age*. Devon County Council and the University of Exeter. 1984.

HMI, *Education Observed 2*. DES Publications Centre, Canons Park, Honeywell Lane, Stanmore, Middlesex HA7 1AZ. 1984.

J Adams & G Feather. *Microcomputer Interfacing Techniques*. Everyday Electronics, July 1983-May 1984.

R A Sparks. *Microcomputers in Science Teaching*. School Science Review, 63, 442-452. 1982.

J L Moore & F H Thomas. *Computer Simulation of Experiments: a valuable alternative to traditional laboratory work for secondary school science teaching*. School Science Review, 64, 641-655. 1983.

W P Baskett & G P Matthews. *Computing advances in the teaching of Chemistry*. School Science Review, 66, 19-30. 1984.

C J Brankin, R Chidzik & J Dunkerton. *On-line Graphics in the Science Laboratory*. School Science Review, 66, 134-136. 1984.

Chris Brankin and John Dunkerton teach at Trinity School, Leamington Spa, Warwick.

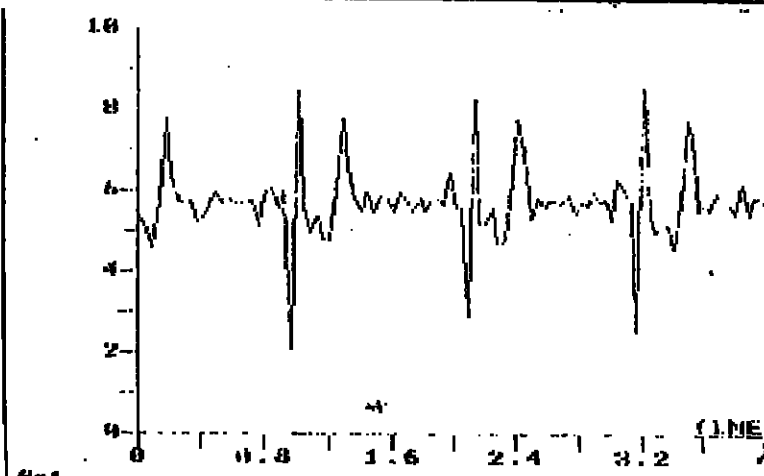


fig 1

```
5 CLS
10 MODE 1
20 yscale=1000/65520
30 maxtime=10
40 tscale=1000/maxtime
50 begintime=TIME
60 action=67
70 REPEAT
80 x=ADVAL(1)
90 thistime=(TIME-begintime)/100
100 PLOT action,thistime*tscale,x*yscale
110 action=5
120 UNTIL thistime>maxtime
130 END
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fig 2

Cumana Setting Standards In Education

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EXTRA

AMATION

Beyond GRANNY'S GARDEN is:

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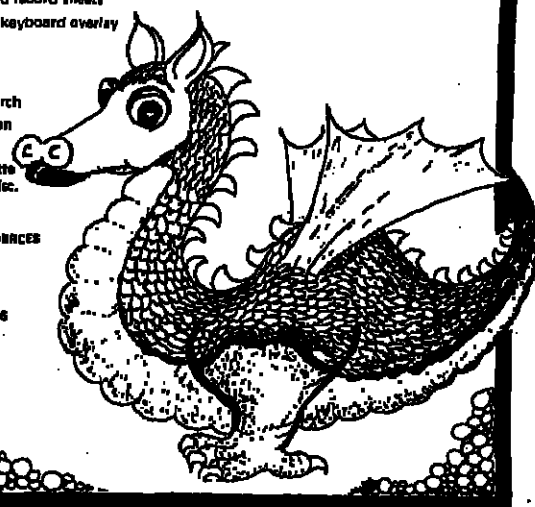
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The telephone is the cheapest and most powerful of all computer accessories. Although educators are now familiar with the facilities of school micros, they will be surprised to discover the power and information-gathering abilities these machines can have once connected to larger computers "on-line".

Information has been gathered and stored in computer databases for over twenty years. Long before the arrival of the microcomputer, institutions such as the British Library and multinational corporations such as Lockheed have been systematically entering data ready for the day when the general public would be ready to demand it. Now that day has arrived and the humble school micro provides a gateway to a world of knowledge so vast that it is breathtaking at first acquaintance.

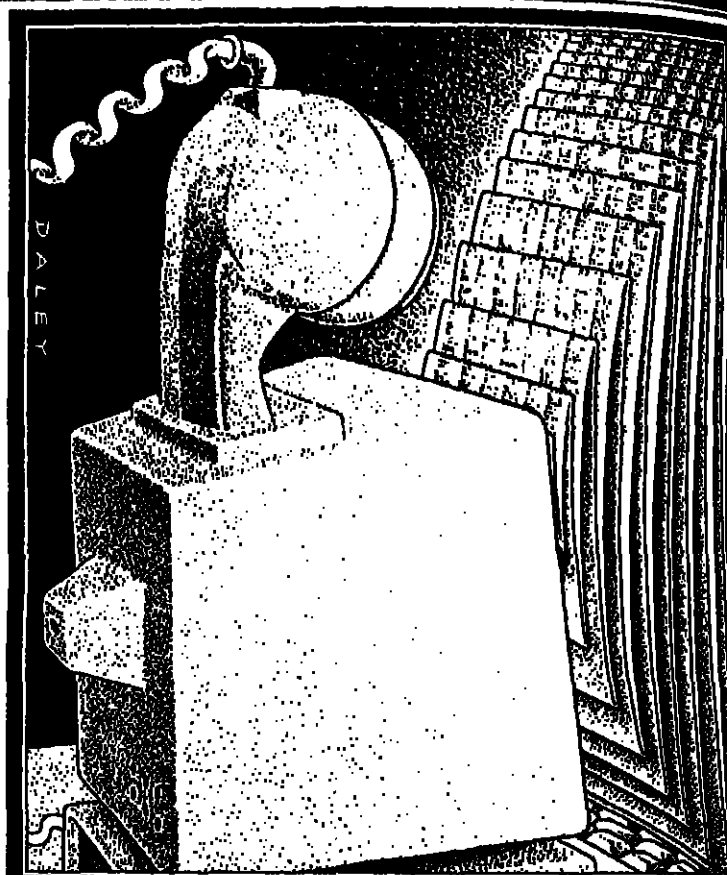
In order to go on-line, two extra items of computer equipment are needed. The first is software which turns the micro into a terminal capable of controlling mainframe (large) computers over the telephone lines. The second is a small box of electronics called a modem which converts the output of the micro into tones which can be sent via the normal telephone system. This box likewise converts incoming tones into digital signals the micro can understand.

Communications software for the BBC Micro is available from many suppliers and costs between £20 and £50 depending on sophistication. Modems are offered by many manufacturers and cost from £50 upwards. The only other requirement is a telephone jack socket. As most information databases can be accessed by a local telephone call, there is unlikely to be a dramatic increase in the telephone bill after going on-line.

The scale and type of information available to the micro user is vast. At one end is Telecom's Prestel service which offers a wide range of information with little depth, at the other is DIALOG, the world's largest store of in-depth information on an incredibly wide range of topics.

PRESTEL
When British Telecom introduced Prestel in 1978 it was the world's first "viewdata" service. Originally it was thought that most people would wish to "view the data" via specially converted television sets, but public take-up of the service was slow and it is only as a result of the microcomputer boom that Prestel has really begun to expand. It is simple and easy to tap into Prestel with a microcomputer.

Prestel has now launched Prestel Education, a scheme funded by the Department of Trade and Industry and



On-line services

by Ray Hammond

shaped for schools by the Council for Educational Technology, the Microelectronics Education Programme and the Scottish Council for Educational Technology.

Prestel Education is also designed to allow schools and colleges to create their own databases of Prestel information for in-school use and to develop electronic magazines. The cost for schools has been set at an annual subscription of £195 and this includes 40 hours of "free" access to the service, which works out at a usage charge of under 1p per minute compared to the normal fee during business hours of 5p. Sadly for educators, Prestel is free of connect-time charges only outside of business hours.

'The humble school micro can now provide a gateway to a world of knowledge so vast it is breathtaking at first acquaintance'

Schools face a hidden extra in using Prestel, however. Although access to the six Prestel mainframe computers can be made via a local telephone call in over 90 per cent of Britain, schools have to suffer peak telephone charges of 5.5p for a minute and a half during mornings and slightly lower costs in the afternoon. Over the school year telephone charges are likely to add between £80 and £100 a year to the cost of using Prestel so a realistic budget for 40 hours of use is likely to be around £300 a year. Prestel excels in providing information about travel, theatres, holidays etc but it has little "learned" information. Rail, plane and ship timetables are all available and there's a wealth of details about weather, restaurants, films, clubs, etc as well as current news headlines.

Tapping into Prestel does, however, provide a good example of the way we will be gathering our general information in the future. It can also be used as an illustration of the on-line technique and the facility for down-loading information and for using the service to store an electronic magazine both offer exciting potential for education. For an annual cost of about £300, it seems excellent value for money.

At present Prestel can't be searched for particular items, users must page their way through menus to get at what they want to see, but a "key-word search" facility is currently being researched and this may become available later this year.

Computing enthusiasts will be interested in the section of Prestel called "Prestel Microcomputing". This section includes Micronet 800, a service especially set up for micro owners. Subscription costs an extra 25p per quarter, but once "logged on" (connected) the micro user will be able to

THE BRITISH LIBRARY

The British Library offers several on-line services under the general heading BLAISE (British Library Automated Information Service). The information contained in this selection of databases has considerable application to secondary education.

Although it isn't cheap to use Blaise services, it is cost-effective and convenient. Experience in using the service will be of immense benefit for children planning to go on to further education or planning to work in "knowledge processing" industries.

Although there is only one central computer for Blaise which is located at Harlow in Essex, the service can be reached via British Telecom's data network which has access points in most major cities. For this reason the vast majority of British schools can tap Blaise without suffering long-distance telephone charges (although there is a small extra charge for using the Telecom data network).

It costs £45 to subscribe to Blaise Line, the main bibliographic service. Blaise also offers a separate, more expensive medical information service called Blaise Link. Blaise Link is only available Monday to Friday from 7pm to 7pm and the connect time is £27 per hour (pro rata for part of an hour). A typical search is likely to cost £2.50. All books and first editions of serial publications have to be lodged with the British Library by law and UKWAG, the main computerized index, offers full details on this vast array of printed material back to 1950. This index is searched by key word, by author's name and by subject classification and it forms an incredibly valuable research facility for any serious student.

Other databases available to subscribers of Blaise Line include Whitakers *British Books in Print*, the index of the Library of Congress, *LC Marc*, a catalogue of 18th century printed material called *The 18th Century Short Title Index* and other databases covering educational materials, audio-visual materials and conference proceedings.

To get the best out of Blaise, on-line researchers would benefit from some rudimentary understanding of indexing techniques and librarianship. These are easily picked up if library use hasn't already instilled them. An understanding how best to use the publication greatly improves the effectiveness of an on-line search. Blaise provides full written instructions to subscribers as well as running regular training courses.

Project research would be a typical use for Blaise Line. Research topics such as *The Suez Crisis* or *Social Life in Victorian London* are revolutionized by using an on-line service.

continued from previous page

Searching *UK Marc* for books on these topics would be likely to reveal many suitable titles and these can either be found locally or may be borrowed from the British Library, provided the request is forwarded through a library service.

Individual author names can be searched and qualifiers such as a stipulation about year of publication or topic covered can be used to narrow the search terms. A full range of subject classifications is also available for scanning.

An on-line interrogation of Blaise Line will typically reveal many more sources than a trip to a local library. In theory local librarians have access to Blaise and can make an on-line search for their customers. In practice new ideas for search terms develop during an on-line session and a personal search is usually much more effective (as well as much more instructional) when done by the end user - the person who will use the information.

DIALOG AND THE KNOWLEDGE INDEX

Dialog is the world's largest on-line information service and although it is located in California, it may be accessed cheaply and easily from Britain. Dialog is a huge database set up and owned by the Lockheed Corporation and special arrangements have been made with British Telecom which allow UK subscribers to tap into the computer for a telephone cost of only \$10 per hour! The only additional communications charge is the cost of a local telephone call to British Telecom's data network.

Dialog offers over 200 separate databases on such subjects as medicine, life sciences, geo-sciences, space, business, leisure, news, history, current affairs, chemistry, physics and many, many more disciplines. In total there are over 90 million items of information in store.

Many of the databases offer not only an index, but abstracts or full text copies of the articles or papers concerned. It is free to join Dialog, but on-line cost can be high and prices vary from database to database and are fixed by the various independent companies who compile the databases and supply them to Dialog. Prices range from \$15 to \$200 per on-line hour. It is impossible to overestimate the usefulness of Dialog to any serious researcher. If a student wants to gather a comprehensive outline of the world's literature on almost any topic, a ten minute Dialog session will provide a mass of sources and a great deal of detailed information.

There is no other way in the world that such thorough research can be carried out. Dialog is international in coverage and surveys journals from over 90 countries. Typical databases are Agricola (a collection of the world's research material and articles on agriculture), Envrilone (a collection of writing on the environment), The Magazine Index (an index of the world's major magazines) and Zoological Record (an index of zoological literature).

The Knowledge Index is a low-cost version of Dialog which is available to UK subscribers outside of business (and school) hours. Although the Knowledge Index offers far fewer database files - 20 as against 200 plus - the most popular files such as Medline, Books in Print, and The National Newspaper Index are all included. The subscription fee for the Knowledge Index is £25 and the flat-rate connect fee is \$24 an hour.

On-line information is relatively cheap and astonishingly powerful. In the future all students and those who work with information in any way will have to be familiar with on-line searching techniques and the above services have the power to fascinate and turn research into an intensely enjoyable occupation.

Further details of the quoted services are available from: PRESTEL EDUCATION, The Council for Educational Technology, 3 Devonshire Street, London W1N 2BA. Tel: 01-580 7552.

BLAISE ON-LINE SERVICES, The British Library Bibliographic Services Division, Marketing Office, 2 Sheraton Street, London W1 4BH. Tel: 01-636 1544.

DIALOG AND THE KNOWLEDGE INDEX from: DIALOG Information Services, P.O. Box 8, Abingdon, Oxford OX13 8EG. Tel: (0865) 730369.

Ray Hammond is the author of *On-line Services* published by Fontana at £4.95.

Carolyn O'Grady on the Times Network for Schools which 'goes live' next month

85 per cent of all I.e.s.s are now represented in the Times Network for Schools and it is expected that 3,000 secondary schools will be using this electronic network and database when it goes "live" in April. The Scottish Microelectronics Development Programme has decided to recommend that Scottish schools standardize on the system.

The Times Network for Schools (TTNS) is based on British Telecom's Telecom Gold electronic mail system, but will have its own central database, which makes it more than a message sender. Schools can use their own computers to receive and send large amounts of text, documents and computers programs as well as messages.

A great advantage of the service is the ability to send at speed and without breaking large text files or programs down into smaller units. Messages and data can be prepared "off line", if necessary, then transmitted in an instant, greatly reducing telephone costs and traffic load on the network. Schools can also receive very quickly a



Electronic network

wide range for useful information.

The Times Network also offers I.e.s.s their own small databases which they can use to communicate with their own schools.

An expanding range of services are already available. They include a Met Office weather news, careers information from a number of organizations

including the army, and a Stock Exchange City of London Trail. It is also planned to have satellite links with schools in Europe, the USA, Canada and Australia and with Operation Raleigh and the Trans-Canada Expedition (a TTNS representative will be sending twice weekly bulletins back to schools and answering questions on

projects which they are undertaking). There will be a budget analysis directed at schoolchildren on the database immediately after the Budget announcement.

The Cambridge Examination Board has decided to put all its information on the database and asks schools to use the network rather than conventional mail.

The cost of the Times Network modem and related software is £152 and there is a charge of £69 each term for unlimited access to the system. Schools then pay telephone charges each time they use the system, but these are likely to be small, say TTNS, because, as a closed user group, they will be able to negotiate special charges. Eventually the network will provide "gateways" to give users access to other data bases, but this is not expected to increase charges.

Times Network System (a new subsidiary of News International, the holding group for Times Newspapers which publishes *The Times* and the *TES*) have set up a special user group to vet the information sent out to schools. Eight regional advisory bodies over-see the quality of information available and help make decisions about what should go on the network.

Already there are plans to extend the network to primary schools if it is felt that it would be useful for younger children.

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EXTRA

Files in the field

by Geoff Strack

The opportunity to go on a field studies trip and visit outstandingly beautiful areas such as the Brecon Beacons National Park has often in the past been marred for many students by the inordinate amount of writing up, calculations and drawing of diagrams. All of this work has to be done both back at the study centre and on the return home. The time spent on these practices exceeds all others, and consequently activities such as physiological investigations and behavioural studies, all of which we associate with contemporary biology teaching are reduced to a minor role.

For teachers from the London Borough of Haringey the turning point came in 1981 when for one week we attended a course at our outdoor study centre at Penderen House in South Wales and carried out the same work as we expected of the students. The whole exercise taught us many things, but for me the most important effect was that it caused me to consider how computers and the whole area of information technology could be used to make our field studies more effective.

In the running of courses I have included a number of different methods involving new technology of which the least subject specific has been the use of a wordprocessor. To some, its inclusion might be considered inconsequential, but if a person comes on a course having previously had little or no computer experience and then before the end of the week, has sufficient confidence to write up their notes using the wordprocessor, then I consider this to be an achievement. There are many wordprocessing packages available for the computers that we have in our schools, but for the BBC microcomputer, we have found that the most suitable is the friendly, easy to use, and free, the friendliest for beginners.

The Brecon Beacons provide the opportunity for students to study a variety of different habitats including heathland, various types of woodlands, fresh water streams and a canal. One of the problems that arises from the diversity of these habitats is that the compilation of a species list for each locality, containing all relevant information is both unwieldy and inflexible unless use is made of a computer data base. QUEST is the one that we have found to be the most useful for this purpose and in using it the records for each habitat are entered as separate files and information can then be accessed and printed out as required.

This has considerably reduced the time previously required for the students to become familiar with the organisms in each locality. In doing this we neither claim to have identified every organism, nor would we want to do, since the lists must not be too long and an element of discovery should be retained for those students who wish to spend time on identification of relatively obscure specimens.

Other benefits have included a reduced pressure on increasingly expensive books for identification, and the teaching of teachers from the classroom of explaining why a certain specimen found in the Brecon and Monmouth Canal cannot possibly be the Welsh equivalent of *Nepitiscus caddisporus* found, according to all field guides,

only in the outmost reaches of North West Scotland.

Having constructed our file for a particular locality the identification of individual organisms by constructing a binary key has proved to be both a worthwhile and necessary exercise for our students. As in the compilation of a data base this can be done quite effectively without the aid of a micro-computer but it is then more time consuming and much less flexible. Using a program that behaves in a manner similar to SEEK, students have the option to extract one field, from a file that has been formed from QUEST or FACTFILE, and then formulate and insert questions that will divide it up to form the familiar "tree".

The shape of the tree and other information can be displayed from within the program and a sample print out can be seen in Fig (1).

Adaptations of animals and plants to life in a rock pool on the sea shore are determined by the prevailing physical conditions. Previously the method used to monitor these was for students to sit by the pool all day and record temperature, pH, conductivity etc, every 15 minutes. On a nice summer's day this could well appeal to some students, but it is an ineffective use of the comparatively short amount of time available.

The Datachord and the Vela are two electronic devices found to be extremely effective in these circumstances, since they can record a variety of physical parameters, and, apart from setting them up initially, no further human intervention is required. At the end of the day they are brought back to the centre, connected to the microcomputer and the stored data can be played back and displayed graphically.

In order for students to examine an area and obtain an unbiased impression of the plants or animals present it is essential that small sections of that area are selected at random. One of the programs provides random coordinates for any chosen grid size plus the option of a printed copy of the figures for each student. Previous methods such as consulting telephone directories, selecting every seventh pair from a table of random numbers, or throwing a quadrat blindly over your shoulder, are comparatively cumbersome, unwieldy and often dangerous.

The drawing of profiles of hillsides, beaches or streams are exercises that are frequently carried out by geographers and biologists, but to achieve a satisfactory end product it is necessary to carry out numerous trigonometrical calculations in addition to selecting a scale that will fit the profile on the

Species	name	1	2	3	4	5	6	7	8	9	10	11	12	13	14
River Pea Shell	A12.3	10	15	30	40	10	0	0	0	0	0	0	0	0	0
Hoglice	A15.1	5	30	40	20	10	0	0	0	0	0	0	0	0	0
Flatworms	A14.2	15	10	10	10	10	0	0	0	0	0	0	0	0	0
Green Hydra	A15.20	2	0	0	0	0	0	0	0	0	0	0	0	0	0
Diving Beetle	A12.0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Mayfly Larva	A13.5	12	3	0	0	0	0	0	0	0	0	0	0	0	0
Palatine worm	A14.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Stickleback	A15.1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Leech	A12.0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
Water Pond Snail	A15.5	8	3	4	4	4	0	0	0	0	0	0	0	0	0
Reedhorn Snail	A12.0	0	12	10	4	0	0	0	0	0	0	0	0	0	0
Water Boatman	A14.15	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Pondskater	A12.1	5	2	10	10	0	0	0	0	0	0	0	0	0	0
Caddis Larva	A13.5	5	1	0	0	0	0	0	0	0	0	0	0	0	0
Water Mite	A14.5	5	5	3	3	0	0	0	0	0	0	0	0	0	0
Water Flea	A15.40	40	80	60	40	5	15	30	40	70	30	40	0	0	0
Plant cover %	A34.15	75	50	25	40	0	0	40	20	20	25	10	0	0	0
Depth cm.	A51.4	35	54	72	51	90	87	48	63	55	27	15	0	0	0

Fig 1

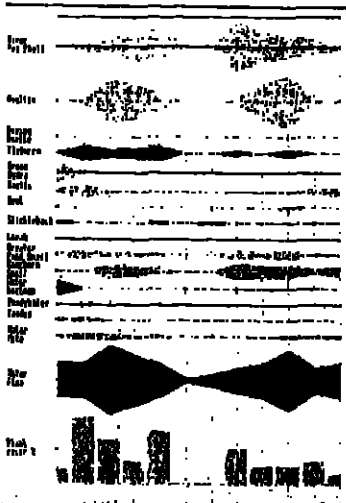
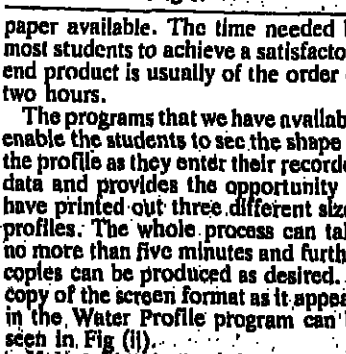


Fig 2



paper available. The time needed by most students to achieve a satisfactory end product is usually of the order of two hours.

The programs that we have available enable the students to see the shape of the profile as they enter their recorded data and provides the opportunity to have printed out three different sized profiles. The whole process can take no more than five minutes and further copies can be produced as desired. A copy of the screen format as it appears in the Water Profile program can be seen in Fig (1).

If we wish to record the changes in animal populations and physical parameters at set intervals along a stream then the data is entered first into the General Data Input program which is in fact a form of spreadsheet modelled on the type of record sheet used at most field study centres. A printed copy of this can be obtained as can be seen in Fig (11). Having entered this data it can be manipulated and used in at least five different ways in the current issue of Ecosoft.

The displaying of the data as a Kite diagram, to show the change in trends of populations along the stream is a useful facility. It is the opportunity to display the data in four different forms on the screen at the same time. There is then the opportunity to choose printed copies of two different sizes the smaller of which can be seen in Fig (iv).

The same data can next be transferred to a Multicorrelations program which enables students to quickly identify significant relationships between various organisms, or organisms and physical parameters, that are worth further investigation.

In the next Ecosoft, data from the spreadsheet will be transferable to a program that will show the relative numbers of organisms at each trophic level by drawing out a Pyramid of Numbers Fig (v). There will also be a program called Ordination that produces a three dimensional section to show the spatial relationship between each of the stations at which samples were recorded.

When the data is saved from the General Data Sheet an opportunity is provided for the students to convert it to a Quest file, and thus take advantage of the wide range of facilities

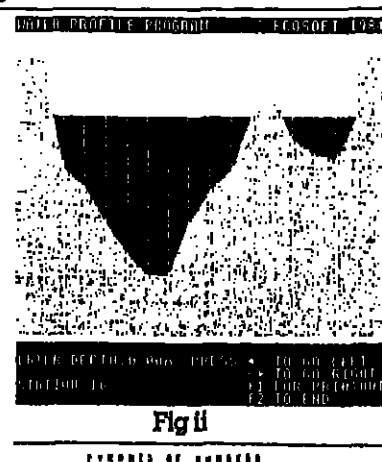


Fig 3

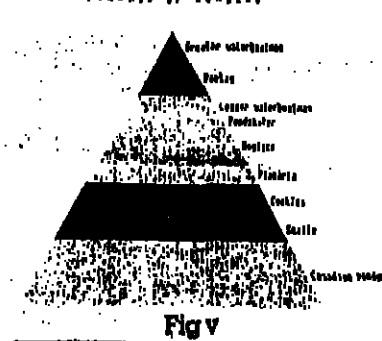


Fig 4

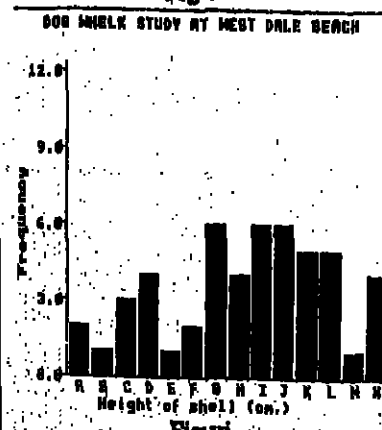


Fig 5

associated with that program. It is also possible to record data as a Quest file and then load it into the General Data Input program. The data can also be converted for use with some of the programs on disk 1. One of these programs is a Bar Charts program and while we would not claim that graphically it is anything special, it does enable ecologists to carry out the sort of manipulations that they require.

This is best illustrated by an exercise that was carried out to compare the shell height of dog whelks from two different sea shores. Statistical information on the whelks was obtained from data entered into the Spreadsheet program and this was then transferred to the bar charts program where the option to define the maximum number for the y-axis in each display, enables the distribution of sizes to be compared more objectively.

The fact that the specimens from the beach at West Dale have a lower mean height and a greater standard deviation than those at Castlebeach is then seen in Fig (iv). This, we have found, makes it easier for the students to compare the two populations and the degree of

exposure of the shore.

One of the problems of recording the frequencies of plants in an area of sand dunes is that Marram Grass dominates everything else and when the results are displayed, other species barely show up. For this reason we have included within the program the facility to delete any item, which in this case would be the Marram Grass, and then redisplay the bar charts to show more clearly the relative frequencies of the other species.

The Correlation program has been used by students of various ages and although our intention has been to encourage teachers to use it to support their work in field studies I am conscious of the fact that, as with some of our other programs, there is a subjective element and will pervade other areas of the curriculum. The program provides a scattergram as can be seen in Fig (vii) and a value for the coefficient of correlation.

When using this program to generate some data on dog whelks it became apparent that it would be extremely useful if each set of measurements entered could be analysed further, consequently we added the facility to transfer each of the pairs of measurements into the Frequency program. This program will then carry out a full statistical analysis of the data, providing information on the mean, range, variance and standard deviation.

Information is also provided on the frequency of occurrence of each line of data and the size of each class can be determined by the user. This data can be saved in the program, in a manner and then transferred to the Bar Charts or Pie Charts programs to be displayed graphically.

The data displayed in Fig (vi) was originally entered into the Correlation program and further manipulations for other programs, including a test for the two sets of data, were carried out by the computer. In using the program we have become conscious of the fact that it is often useful to carry out a Linear Regression in addition to Correlation and we will therefore be providing this in the next Ecosoft. The data for these programs will be compatible.

Our philosophy in the development of Ecosoft has been that the software should be really useful, providing a range of statistical tests and the opportunity for users to experiment with a variety of different graphical displays, while remaining attractive and easy to use. The response that we have had from people who have been using it and from those who have seen it demonstrated has been very encouraging. Teachers who have never used a computer before have readily taken to it, and this I believe is because of the advantages that it has over previous methods. Having used previous methods, many teachers have now able to make use of the computer for other purposes. One of the teachers who used Ecosoft, made the point that the construction of profiles, graphs or kite diagrams, now need no longer be the end point of an ecological investigation. Results can be produced quickly, inferences drawn and further studies decided upon.

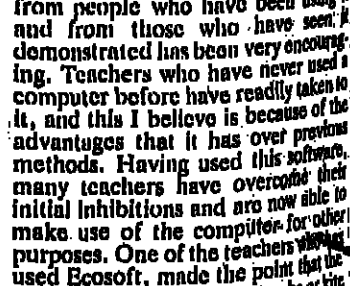


Fig 6

The initial Ecosoft package comprised of two disks and full documentation is available now, and a further two disks and a primary package are in the advanced stage of preparation. Details can be obtained from AUCBS, P.O. Box 100, Walsby, North Yorkshire YO21 2BN.

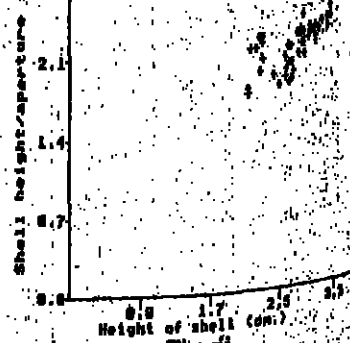


Fig 7

Peter Avis is director of the M.E.P. South Yorkshire and North Yorkshire Regional Centres and has written the Ecosoft programs.

EXTRA

Software co-op

by Peter Avis

This is a description of our efforts to provide a way of getting computer programs into schools as cheaply as possible. It is not suggested as a final solution but an interim measure.

Two years ago the L.E.A.s in this MEP (Microelectronics Education Programme) region - Sheffield, Barnsley, Rotherham, Doncaster and Humberstone - set up RESOURCE, a non profit making experimental publishing cooperative. Although we were certainly not professional publishers we always encouraged ourselves by thinking that the Ark was built by amateurs but the Titanic by professionals!

As a team we had some writing experience, a little graphics help, and a lot of enthusiasm. We aimed for robust software designed by teachers, programmed by good technical programmers, with straightforward documentation written by teachers.

Apart from the lack of money in schools the reasons for this approach were that we realized that our markets would be small and we wanted to respond rapidly to change. It is possible to produce two thousand books, and keep them on the shelf to wait for a sale, but not a computer program! The manufacturer might change the operating system of the computer so that our program "crashes", or they might bring out a new wonder computer to replace the old. Users might want it to run on a network, or with the latest telesoftware chip.

On the more positive side someone might produce some good educational data for the program to use, or even improve the program. We had to allow for a continually changing environment and we had to be prepared to support the software.

Our thoughts were, and still are, that software should be treated and used as an adaptable and interactive medium and this requires constant maintenance, short production runs, constant involvement with teachers working on new materials and the ability to produce quickly. We tentatively experimented with an initial trial by publishing 25 titles. These were mainly aimed at the primary level and most were produced by the PEAC (Primary Education and Computers), project in Humberstone.

These proved to be remarkably successful selling at £3.95 a time and over 1000 programs were sent to schools within the region in the first six months. We reluctantly decided to charge for each program because the project had no capital and we needed to recoup materials costs. The alternative mechanism, i.e. a duplicating materials free to schools, would have been prohibitively expensive taking into account the production of documentation and the tapes, disks etc, especially as we hoped that eventually we would have a catalogue of more than a hundred programs.

As well as the need for schools to get software there was an equally important call for teachers to have an outlet for their creative talents. I was continually surprised at how many teachers were able to produce exciting and imaginative work. It seems to me to be absolutely necessary that we found ways of encouraging and disseminating this good work as far and wide as possible.

From the interest shown in the first experiment it was obvious that we could provide an outlet to many people who wanted to see their materials published. At present we have over 50 items in our regional catalogue and another 80 possible items which we could publish after tidying up and documenting.

Our initial regional experiment was a success but we had a lot of feedback from teachers outside the region and it seemed a sensible step to look to national distribution. We had several MEP funded projects which also needed to be disseminated nationally. We launched seven national titles just before Christmas.

They all have different ancestries and illustrate the different kind of ways that software can be generated. For example *Brilliant* and *Flow Search* are type dedicated databases that allow teachers to store and observe birds and flowers and record their results over a

number of months. They can use the computer to search for patterns and display graphs on the screen. This was the work of two teachers who got together as part of a regional team with a programmer. *The Castles Workbook* was produced by David Ellingham in Sheffield as a many faceted resource for primary schools exploring castles as project work.

Control BASIC for the BBC was developed and programmed by Nigel Hunter at the regional centre based on the deliberations of a conference held over two years ago. This conference decided it was important to produce software help for teachers interested in using computers to control outside devices like motors and lights etc. *Control BASIC* provides extra commands in BASIC to allow the user to send signals to the outside world quickly and easily. This work was done in collaboration with the Chiltern Region who developed versions for the RML computers.

The Light Detection Kit was developed at the centre because many teachers were interested in control but could not afford the expensive equipment required. The aim was to develop a kit for less than £15 to allow schools to explore control and analogue signals.

BITS was developed and programmed by Barry Newman from Northants Educational Computing Centre, with documentation by Hilary Pitts from East Midlands MEP region. It was tested by a variety of primary schools. It uses a Logo type environment to allow the user to define procedures which perform computer control operations.

IT in the Secondary School was developed from work at Rowlinson School in Sheffield, together with several other schools. A group of different subject teachers covering history, science, computer studies, mathematics, English, business studies worked to produce a one year third form course on Information Technology. This material consists of a folder of their notes together with the software they developed for the course.

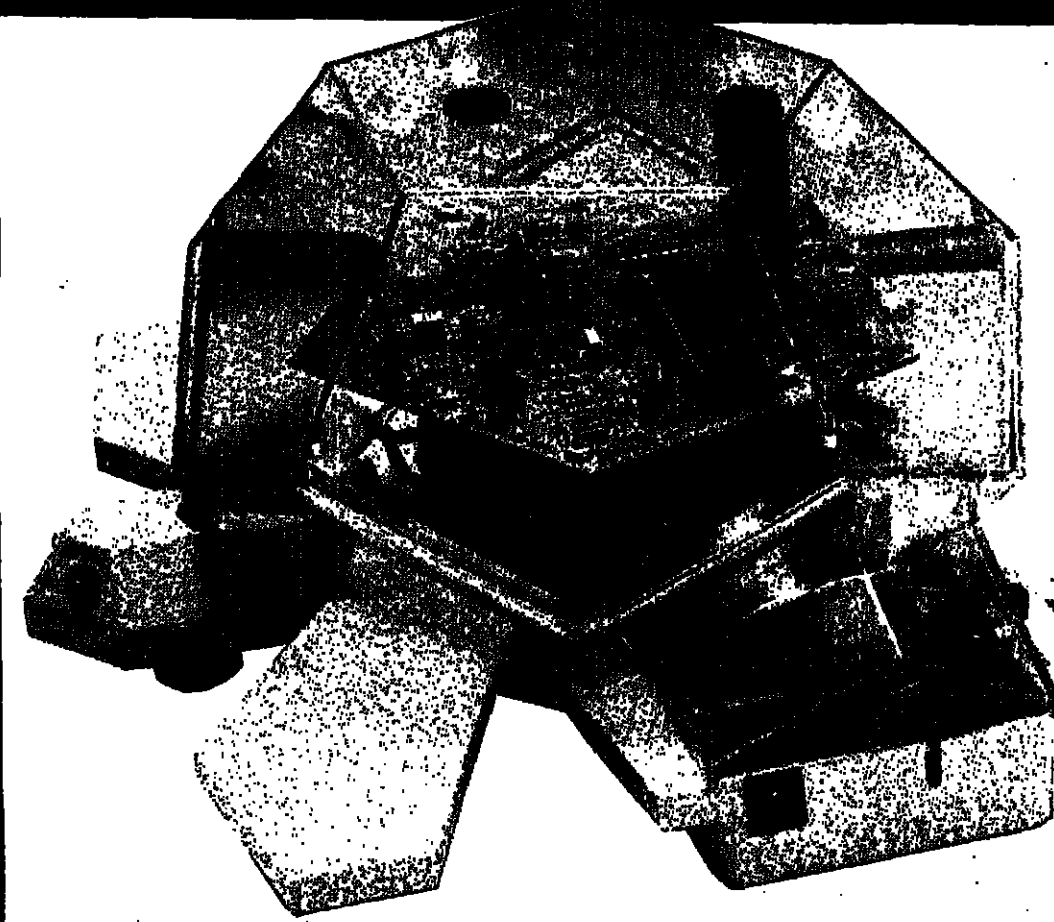
The main point in amplifying these projects has been to emphasize the variety of ways software is produced. I can see no evidence that the demand for initiatives like RESOURCE is decreasing. All the reasons for its existence remain and more increasing in a changing world it is necessary to share our resources and for teachers and L.E.A.s to cooperate. Teachers need to meet, they need to discuss, they need to work with professional programmers, they need trial materials, they need to modify them and support them with good classroom resources, they need to see their work materialize as usable materials for other teachers. Obviously a lot of this activity takes place in various L.E.A.s across the country and it is pleasing to see the cooperation that is going on.

Unfortunately there has been a shift towards the view that good software can only be produced by central teams. There is obviously merit in central units where expertise can be collected together, especially if the work is disseminated by a low cost L.E.A. system, but it is not the only answer. The popularity of programs like QUEST, and DART from Chiltern, the success of EDWARD, EDPAK, INFORM, Developing Trax etc show that what is most acceptable in the classroom has been developed close to the classroom.

At the moment there is considerable debate about the way ahead on supporting education in the area of microelectronics. Of course there is a need for well published packs of significant work produced commercially, there is also a need for central teams producing definitive materials which can be disseminated by L.E.A.s, there is also a need, however, for local and regional initiatives with a cheap and cheerful image which allow teachers materials to be distributed to other teachers quickly; that material in the seed corn for the future.

Peter Avis is director of the M.E.P. South Yorkshire and North Yorkshire Regional Centres and has written the Ecosoft programs.

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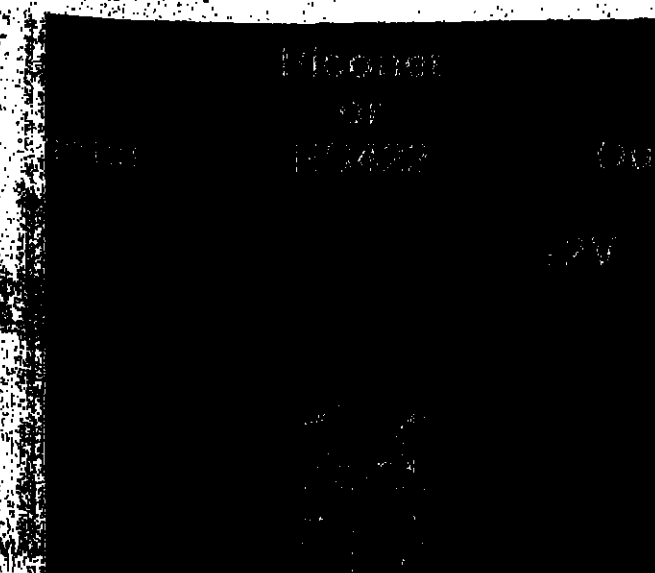
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THE EDUCATIONAL MICROCOMPUTER

FOR THE WORLD OF EDUCATION



EXTRA

Essentially, careers education should focus on helping young people to understand and experience the range of opportunities available to them; it should enable young people to experience, understand and develop their personal strengths and qualities and help them to be aware of their limitations; above all, young people need to be enabled to develop and experience a personal sense of autonomy whilst appreciating the responsibilities and skills required to take charge of their own lives.

If computers are to have any place in careers education and guidance, the software must be developed and used as an extension of the curriculum and as part of the personal development of young people.

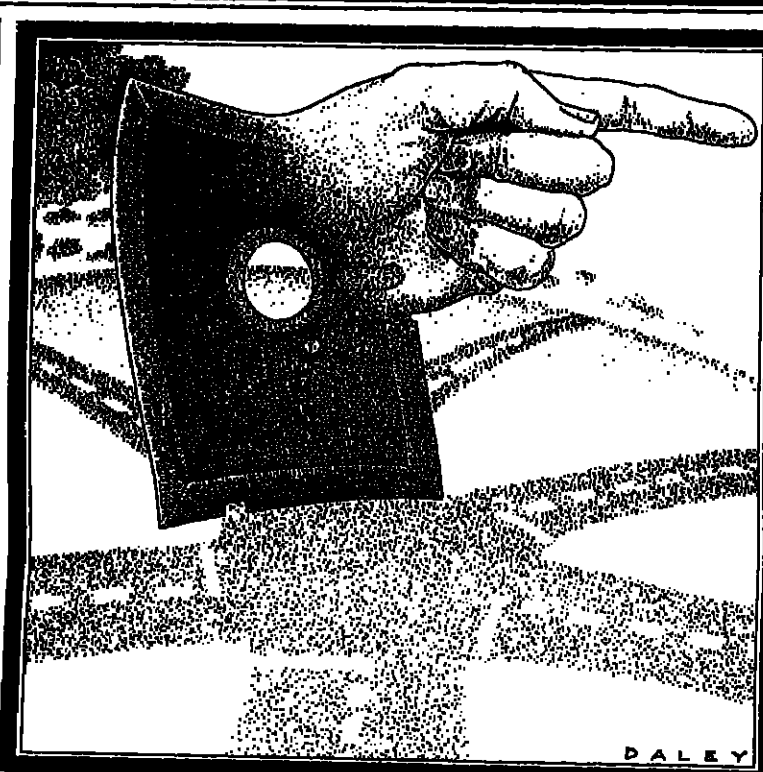
Guidance work is an open-ended affair necessitating a good deal of administration, resource provision, and individual counselling as well as classroom teaching.

Careersoft has produced two excellent programs, both of which have cross-curricular implications and are reasonably priced. The *Careers Administration Package* has been "designed to assist Careers Teachers in their day-to-day administration"; more importantly it is to be used by students to give them an "insight to the management and uses of computerized data handling". It achieves this by enabling some of the routine tasks of a department to be treated as work experience. The only personal information required by the program is surname, forename and form which overcomes any concerns regarding confidentiality.

The whole package is menu driven, and requires a disk drive and easy access to a printer; once a year-group of names has been typed into the program - an activity simplified by the use of strong colour and good graphics - three major options are available to the user. First is the facility to type in the dates and times of any interview appointments. These can be printed in a variety of formats and in a number of quantities. This is especially useful for the interviews and group sessions held by the Careers Service with fifth and sixth form students. Frequently, multiple copies of this information are required. The program enables easy up-dating and selective print-outs. A special security code prevents accidental erasure of information by students or staff.

The second key feature is the facility to identify and print lists of selected groups of students for such activities as visits or school teams, etc. A very fast and effective sort routine is available for both these options; 200 names can be sorted by alphabet or form order in about four seconds.

The special print routines are the third main feature of the program. Having selected a group of students for a visit, the program presents the user with a series of questions including the date and venue of the visit, whether registration will be missed or parental consent required. The program will then generate to screen or printer a staff notice, a letter to each form teacher detailing how it will affect members of their form, and a personal-



Careers choices

by David White

ized letter to each parent with a reply slip, if required.

The program is capable of achieving its objectives where students are concerned; but many teachers may feel that it is also a useful introduction to computers for themselves and use it to gain confidence while solving some time consuming activities. More experienced users may find the program less flexible than they would like particularly in relation to the standard letter and print format. It would have been helpful to have included a single sheet paper feed option. In order that letters could have been printed onto headed notepaper.

Careersoft's latest program is its *Local Industry Package*. This has been designed as a dedicated database with almost limitless possibilities. It permits students to be involved in a variety of activities, in particular, the surveying of the local industrial and commercial scene. They can use it to practise and develop information-seeking skills and most interpersonal skills.

The product of such activity has implications for opportunity experience schemes such as job sampling and can be quickly accessed by a combination of different search factors.

While most fieldnames are predetermined, three have been specifically left unnamed to allow the user greater flexibility. The printing routines include address labels, telephone directory, and different aspects of individual records. A significant development is the addition of a simple text editor with a mail-merge facility; equally, the

program enables any wordprocessor capable of spooling text to file to be used. Single sheet paper feed is also available.

Both these programs come with good documentation, the latter including teaching materials. They both make excellent use of colour, graphics and visual display, sound being used for warnings or to denote a change of activity.

Pre-CASCAID has been developed to encourage students to investigate a broad range of career opportunities and uses an adapted form of the careers file from the mainframe CASCAID guidance aid used by many I.E.A. careers services. The program is in two parts which the user can swap between at any time.

The "Aspects of Work" section encourages the exploration of job characteristics. To select an academic level and one of three possible ways in which jobs can be classified; relevance to certain school subjects, the way in which the career appears to other people, or the industrial/commercial setting in which the job usually appears.

A further list of options are offered resulting in a list of career titles relevant to the choices made. Students can choose to amend their choices or move to the second part of the program, the "Specific Careers" section.

In this part of the program the user can select further information on any of 410 career titles. This necessitates reference to the printed manual for a code number. All the titles are cross-

referenced to the CLCI - the Careers Library Classification Index. Users would have some difficulty in pursuing further information sources by themselves if their school or careers service did not use this index.

The "Specific Careers" section can be accessed separately from the rest of the program.

The documentation is neatly presented and there is a worksheet that can be photocopied - but is printed in green ink and may cause difficulties with some machines. A major omission from the program is the lack of a printing facility; the acquisition of hard copy is an important motivator for many young people and serves as an accurate record of investigation which can be shared with parents, friends, careers officers and teachers.

The on-screen presentation is generally good, although some may not favour the use of monochrome black, particularly those who only have access to green screens or black/white monitors. There are other minor niggles at some aspects of the presentation, but, in general, the program is a useful addition to careers information-seeking resources.

Pathfinder and *Supermarket* are two programs published by COIC (MSC). *Pathfinder* makes use of an "action maze" to enable students to make choices on behalf of Chris, an imaginary school-leaver with few or no formal qualifications. In so doing, young people are actively encouraged to think about and discuss the implications resulting from selecting various courses of action.

Although in no way responsible for the concept and design of the program, the reviewer did co-author the accompanying teaching notes.

Supermarket is a retail management simulation game. It can be played by one person, or by two people in competition with each other. Users can choose to be "Trainees" or, as they become more proficient, "Professionals".

The game is in two parts; at the beginning of each week, decisions have to be made regarding profit margins, staffing levels, etc. After making these decisions, the player has to run the store. This part of the program is in real time, that is, hours pass by, shelves become depleted, new stock has to be ordered, a balance has to be maintained between the number of customers at the tills, which in turn means deploying staff between selling and checkouts - in case that is insufficient, extra stress is caused by the inclusion of late night openings, part-time staff, various unforeseen events and the level, or lack of, profitability being constantly displayed on the screen.

The Pause button does more than enable the teacher to discuss various learning points - it gives all concerned a well earned breather. The program has excellent graphics, and makes good use of colour, sound and visual display; it reflects a standard for all on-screen presentation of educational software. The documentation includes a sheet on which to record weekly decisions.

The indices are designed to complement rather than replace careers literature, and the advantage of JKI is that it is a well researched, accurate, and relevant tool, providing information that is not always easily available elsewhere. A shelf life of approximately two years is, however, certain to be a limitation, though an updating service is expected to be available. Quite clearly, students can use the indices at their own pace, and by testing out their knowledge, their self confidence can be enhanced.

I can see their use in vocational counselling as an aid to testing out a student's occupational knowledge, but remain unconvinced that while the questions are designed to be answered easily and readily, the indices provide the educative process to help students formulate questions for themselves.

The microcomputer version is easy to use, incorporating identical material to that published in the packs. Clearly JKI does not need to be computerized - this is a computer orientated approach - nevertheless it could be a valuable addition to the careers library, and there are advantages in following the questions systematically rather than being able to skip those which are not of particular interest. The questions are carefully designed, and they are relevant. It is a pity that they are so task orientated. Personal effectiveness skills for more than task competence, and that aspect of guidance will need to be provided away from this micro computer and the resource packs.

David White is Head of Guidance & Careers Education, Ecclesfield School, Ecclesfield, Sheffield. He is co-author of the teaching notes for Pathfinder and acts as a software consultant to COIC.

While on secondment to the CCDCI survey, David White completed a survey of micro software for careers education, and developed a two day in-service course.

Further information about the Project is available from Barry Hilton, CCDCI, COIC, 21 Clarendon Road, Blackley, Manchester, M14 6JY.

Job knowledge indices

Alan Butler on a software version of the JKI

Job Knowledge Index

Eight group titles, published as printed resource packs and software for BBC B, Commodore 64 and RML 480 Z micros.

Resource packs £4.95 each; cassettes £8.95 each. Published by Carcerdata, Yeoman House, 76 St James's Lane, London N10 3RD.

Many careers advisers are already familiar with Michael Kirton's work on the development of Job Knowledge Indices. The principle is simple enough: use critical unambiguous questions to help build an objective picture of particular occupations. The material now published comprises eight titles: teaching; the medical profession; broking and insurance; design; nursing; finance banking and accountancy; buying and selling; air traffic control and air crew. Each pack has been thoroughly researched - 175 professional bodies have been consulted, discussions held with 15,000 practitioners and the readability has been tested in 150 schools with 25,000 pupils.

David Cleatton has joined Michael Kirton in publishing a revised JKI in two formats - resource packs and software. Each pack consists of a questionnaire (with around 25 critical questions, posed as statements requiring a true, false or don't know response to be recorded), and an answer sheet for checking responses (which identifies the correct answers and sources of further information, as well as other related jobs). With only 35 indices included in the eight published packs, and 25 more (five packs) in preparation, the range of information is unfortunately limited. Occupations covered are at a technician level and above, and the readability suggests that the material will be more appropriate for fifth and sixth formers, and students in further and higher education. In too many cases it was frustrating to find incomplete sentences in the answers, and one wonders if the system is as autonomous as the concept would permit.

The indices are designed to complement rather than replace careers literature, and the advantage of JKI is that it is a well researched, accurate, and relevant tool, providing information that is not always easily available elsewhere. A shelf life of approximately two years is, however, certain to be a limitation, though an updating service is expected to be available. Quite clearly, students can use the indices at their own pace, and by testing out their knowledge, their self confidence can be enhanced.

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Yours sincerely,

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- Spreadsheet: Multiplan
- Database: Superfile, Supertabs, Superforms
- Graphics: RM CAD, An entry level, 2D graphics package
- Languages: A paintbrush package
- Business: RM BASIC, RM LOGO, RM PASCAL
- Assembler: PEGASUS, A full professional suite, with multi-user capabilities, offering Sales Ledger, Purchase Ledger, Nominal Ledger, Invoicing Payroll and Stock Control

RM NIMBUS RECENT PRESS COMMENTS

"The world of 16-bit software is opened up through MS-DOS... But perhaps the most exciting feature of Nimbus is its expansion potential."
(Educational Computing, Feb 1985)

"The commercial market will be very interested in Nimbus."
(Computer Weekly, 31.01.85.)

"The Nimbus is an impressive system. The graphics are superb, and the whole system well thought out."
(Practical Computing, Mar 1985.)

"Research Machines brilliant new Nimbus."
(Guardian, 24.01.85.)

"The RM Nimbus has an incredible specification for a machine with a (commercial list) price starting at £1395."
(The News, 02.02.85.)



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EXTRA

At a theoretical level the educational world has long accepted the inadequacy of a model of teaching which is essentially one of transmitting a body of knowledge from teacher to pupil. In practice however the recent HMI's publication "Education Observed 2" (published by DES) reports that "teachers need to have higher expectations of their pupils, to take greater account of pupils' individual differences and generally to make lessons less teacher-dominated". This report also goes on to comment that most secondary school classrooms do not "encourage pupils to develop arguments; to formulate, as well as, to answer questions; and to articulate their ideas through more open discussion". Mathematics educators since the publication of the Cockcroft Report (1982, Mathematics Counts, HMSO, London) are also now far more aware of the potential role of discussion in the mathematics classroom and are trying to find contexts which encourage children to talk about their mathematics and explain what they are doing.

Changing emphasis in the mathematics classroom from a teacher-centred to a more pupil-centred approach is not however an easy task. Individualized learning schemes have started to shift the balance but it is still the case that most pupils do not expect to discuss, collaborate and take responsibility for their own learning. The advent of the microcomputer provides a golden opportunity to make more progress in the mathematics classroom, programming in Logo is already being shown to stimulate exciting investigative, pupil-centred work.



...and then she had the idea of dividing it by 360

Celia Hoyles, Rosamund Sutherland and Joan Evans observe collaboration between pupils using LOGO in mathematics

The secondary school mathematics classroom has specifically focussed on the nature and extent of the collaboration between pairs of pupils while programming in Logo. During the year 1983/1984 we acted as participant observers in two first year comprehensive mathematics classes in which Logo was part of the normal mathematics lesson.

Both these classrooms follow individualized working schemes (SMILE

and SMP (1-15). In one classroom the pupils had the use of two RML machines and in the other the use of four Commodore 64 computers. The pupils worked in pairs and were given the freedom initially to devise their own goals and how they might be achieved. This we have found to be important for building confidence and encouraging involvement.

We carried out detailed case studies of four pairs of pupils from each school

across a range of ability and gender. We made video recordings of all the computing sessions of our case study pairs and recorded all their spoken language. We have transcribed the data and developed categories of intervention, programming activity and collaboration to use as frameworks for our analysis.

The analysis to date indicates that Logo within the mathematics classroom has provided a rich context for the use of mathematical ideas and processes. The activity has provoked pupils to come up with and struggle with challenging goals of a mathematical nature and in so doing learn to articulate their thoughts and communicate and negotiate with their partners. We have found that pairs of pupils need time to learn to work together effectively but none the less have observed a qualitative development in their collaborative skills. For example pupil pairs are now using the following types of responses and initiatives when working together: suggesting challenging ideas; keeping the project going and monitoring the pair's activity; changing the level of representation of the work from the conceptual to concrete or vice versa; provoking reflection; encouraging and demanding systematic recording and checking.

We have started to look at the different levels of collaboration and have observed that the relative dominance between pairs tends to vary during the different kinds of activity. We have also found that the longer the pupil pair work together the more interchangeable the roles become as pairs adjust flexibly to the needs of the partner and the needs of the task. Pupils do not seem to have a rigid working style but tend to change their approach according to their goal, its context and the general social situation.

John and Panos are one of our case study pairs. Panos is an outgoing, friendly, talkative boy with a tendency to be impulsive and easily distracted. John, on the other hand, is quiet, reserved and thoughtful. John has an important role within the pair of "managing" Panos, bringing him back to the work when his attention wanders and encouraging him to be more systematic. For his part Panos is responsible for keeping the pair motivated and for making the

stream of exciting ideas. By the end of the year both the boys were able to demonstrate a remarkable ability to question each other and try to explain when their partner was confused. This is illustrated by the following excerpt in which the pair were devising procedures for regular polygons. They had already checked in direct drive procedures for a pentagon and a hexagon. Panos then confidently defines a procedure to draw a triangle in the editor:

TO TRI
REPEAT 3 [LT 60 FD 20]
END

John was not convinced that this would work:

"I'd laugh if it didn't work."
Panos then remarked:

"So would I... well I wouldn't actually laugh."

Of course when they typed TRI the turtle did not draw a triangle! John was certain that he had known that it would not work.

"I knew it."

Panos was baffled and asked John to help out:

"Where did we go wrong?"

John tried to explain but was really only at the stage of trying to sort out his own ideas:

"You went wrong with the... what was it?"

John needed to look back at the procedure definition. He did this and tried again to explain in a rather halting fashion making reference to the total turtle trip theorem:

"It can't be 60 you know... that's 180... three 60's are 180... not 360."

Panos still did not understand John's reasoning but realized that he needed to return to the concrete level of direct driving.

"We've got to do it slowly."

Panos started to draw a triangle in direct drive thinking aloud as he did it:

"60... 60... it's 60 I'm sure... 'cus remember equilateral triangles are 60 degrees... and a triangle has 180 degree angles... so three 60's..."

John however wanted to try out his idea:

"Can I just try 120?"

Panos was willing to let him try although he was not convinced:

"Yeah... I don't know if it will work."

John typed in

REPEAT 3 [RT 120 FD 60]

and as the correct image emerged John said

"It does..."

Panos was impressed but still wanted to know why:

"Volla... how did you do that?"

John could now confidently and clearly explain:

"It's 120... look it's 360 around a point and you've got to... so it's 120..."

Sally and Janet are another of our case study pairs. Sally is an exceptionally shy pupil who lacks confidence in her own ability but is considered by her mathematics teacher to be the brightest in the class. Janet is a bubbly outgoing girl who is about average in class for mathematics and loves using the computer. Janet and Sally are friends in and out of school. They both value their collaborative Logo work as illustrated in their own words:

(Janet) "Well I reckon it wouldn't be as good on my own because we both can do different things; and so when you put it together you get a better thing than you would on your own." She also said that:

"Well... I normally think up the idea of what to do, and then Sally normally... ummm say we're doing the... ummm... what's that..."

EXTRA

Music and micros

by Mike Thorne

continued from previous page

wouldn't know how to get the corners and I kept on trying and then she had the idea of dividing it by 360... like I was on my own I'd keep on trying to get the right angle."

Janet also told us that she thought she learnt more from Sally's explanations than from the teacher's:

"Like a teacher would tell you and go off... if Sally told me she'd stay and she'd help me... and we help each other... we like teachers but we don't like teachers... if you know what I mean."

Sally's perspective on the collaboration was:

"There's always like a little argument between us to see what... usually I'm wrong... ummm we're supposed to turn left and Janet thinks we're supposed to turn right... usually I'm thinking about something different as well... so I usually get it wrong."

We think that Sally benefitted from the collaboration because Janet pushed her into elaborating her ideas thus helping her to think through them more clearly. Janet also provided a continuous source of suggestions, ideas and comments. We think that Janet benefitted from the collaboration because Sally was able to make decisions at a conceptual level about mathematical issues and explain her decisions to Janet. This helped the pair to progress in their task and also helped Janet's understanding of the issue. This is illustrated in the following extract when Sally and Janet wanted to make the turtle draw one and a half circles using the ARC command. Janet wanted to enter:

ARC 40 360

ARC 40 180

However Sally wanted to combine these commands into:

ARC 40 540

Janet did not understand what Sally was doing so she questioned her:

"What you doing?"

Sally started to explain:

"That will take it round to there."

Janet did not want to take the risk of trying something which she was not sure about:

"No just do 180... that will take it down to there."

Sally was insistent:

"Yes I know but..."

Again Janet disagreed:

"That's where we need it..."

This provoked Sally to elaborate her argument:

"Yeah... I know but instead of doing two 'commands' you can just do one 'commandment'."

Janet asked her to elaborate more:

"How?"

Sally replied without any explanation:

"ARC 540."

Janet corrected Sally's arithmetic (indicating that she was at least following the argument):

"What 540 or 540?"

Sally then tried to explain again:

"Oh 540... that will take it round to there without having to do that... 'cos if you add that to that you get... you might as well tell me to walk another 10 steps... that's what I'm on about."

The issue was resolved by Sally typing in ARC 40 540.

The way the pairs of pupils have learnt to collaborate together during their Logo work as illustrated above seems to have spread to their other mathematical work and affected the level of discussion of mathematical issues within the mathematics classroom generally. We believe that this could only happen if the computing work is seen as a natural part of the mathematics curriculum with the computer available in the mathematics lessons for use as and when appropriate.

We will continue to study four of our case study pairs throughout the next two years of their schooling and are also extending our work into another ten London secondary school mathematics classes.

The report of the first year's work has just been published and can be obtained from: Rosamund Sutherland, Logo Maths Project, Institute of Education, Department of Mathematics Statistics and Computing, 20 Bedford Way, London WC1N 1AL. (Price £5.90 + £1.30 for postage U.K.).

This research was funded by the Cambridge Education Trust.

In these days of industrially motivated curricula, it is surprising that music education has escaped the treatment. Given the large sums of money made in the pop music industry, why hasn't the DTI given half price music synthesizers to schools to persuade more youngsters to seek a career in the music industry?

Certainly the Japanese and Americans are convinced that a boom is due in sales of professional recording equipment and computer-music gadgets. For some months there have been two magazines - *Home Studio Recording* and *Electronics and Music Maker* - devoted to them. From their pages you can select a 16-track digital recording system complete with mixer and various devices to change the sounds held on tape for about £10,000 - to install in your home - or for just £900, a keyboard synthesizer of the quality used by many leading pop groups.

Just as BBC Micro will do to begin with, however. Indeed, in Jersey the education authority has bought all music departments a BBC Micro so that a start can be made on harmonizing curriculum with machine. But as Colin Wells, manager of the Reading Music Education Centre Microtechnology Unit discovered during a research project carried out in three West Country authorities, until recently there was very little good quality commercial music education software around. And his survey took in more than 40 programs.

The Reading Music Education Centre Microtechnology Unit was set up by Dr Anthony Kemp, director of the Music Education Centre. Dr Kemp observed that computerized music devices were becoming cheaper and gaining in popularity and that there was a danger of music teachers being left behind. Rather than have the technology take off on its own direction, it would be better to gain control by knowing what possibilities were and deciding upon an appropriate curriculum. As a result he established the microtechnology unit funded jointly by Reading University and the Microelectronics in Education Programme (who are providing £75,000 over the period September 1984 to March 1986).

Kemp emphasizes that microtechnology is just one aspect of the Music Education Centre's work which is also undertaking a large project in multi-cultural music education. Principally it is a resource centre, now offering more than its unique collection of music books and the more traditional apparatus of educational technology. And while the main aim of the centre is to provide a service to the six authorities close to Reading, the computerized instruments and software are available for any callers to try out.

The unit will also mount two or three day courses within the Microelectronics in Education Programme's regions or I.e.a.s. and a whole series of conferences is being held in Reading culminating in a week's residential course for teacher trainers in July. (More details can be obtained from the centre on Reading 873855.)

According to the MEP Update on Microtechnology and Music Education (which the centre prepared) most of the software available is for the Apple computer and from the USA. Nearly all this material, it says, is designed to instruct individuals in fundamental music theory and aural training, though some utility programs for helping with composition are available with the more expensive version of children freed from their own performance inadequacies to use their creative musical ability to the full, the technology lets you down - for the present at least.

Thus, the otherwise excellent Music 500 system (for the BBC Micro, from Vector Marketing) allows eight voices in a composition which can be output in any of seven stereo positions and has a frequency range as good as the very best hi-fi system - but it is to be programmed in a special language called AMPLE. AMPLE uses reverse-coded notation so that asking the system to play a chord by combining notes A and G would in effect be

following stream of hieroglyphics makes Lute Tablature look simple and will be meaningless to most music teachers:

"Wsw" [B48,C24,E/E 48,dcFfe dEGG+lg/e 24

Actually, it's part of the carol "While Shepherds Watched" written in AMPLE. In *Note Invaders* from Chalksoft, which offers drill and practice note recognition, typing skills seem more important for success than ability at the actual musical task. But worryingly, the program was popular with pupils in the West Country.

More recently, respected names in music education have started to explore possibilities. The Reading Centre has a couple of programs from George Self. *Silent Music* is an exercise in keeping to the beat. *Rhythm 2: Learning Rhythms* allows you to enter a rhythm in ordinary musical notation and then you can hear a tune made up on that rhythm. When you're happy with one rhythm, a second can be added and then it's possible to hear the tunes together.

ITMA has also been developing music education software under Colin

Wells' leadership. Four programs will soon be ready for distribution. These include *ZIG* where one child works on the computer at a time and has to decide if the second note played through the computer's speaker is lower or higher than the first and then gets an instant response - right or wrong - and *CHORDS* which allows you to enter a chord sequence - possibly to modulate from one key to

another - and then plays back the result. Seen in the context of the new 16+ National Criteria for Music, with the emphasis firmly on composition, listening and performing, both software and hardware have a long way to go. By establishing this centre, MEP and Reading University have made a timely contribution to involving computers in the realization of these ideals.

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Cambridge University Press,
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for secondary school

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(part of the Schools Council Industry Project)

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SOFTWARE REVIEWS 56-60

The Mr T Series
For Commodore, BBC, Spectrum
£9.95 cassette; £11.95 disk
Good Housekeeping/Ebury
Learn About Words
For BBC
Learn About Shapes
Sketchpad
Both for BBC and Electron
£9.95 cassette
Goldstar
Workshop
For BBC £11.95 disk; £9.95 cassette
Acornsoft

For around four or five months, there's been a BBC micro in my study, and a pretty good range of more or less serious - at least no deliberately trivial - programs lying around there too. The kids and their friends or acquaintances wander in pretty much at whim and get me to load this or that. Novely ensures that any new tape gets used once at least. After that, it gets used if the children want it.

They have studiously ignored the one I think the highest of, in the Mr T series for the very young. The boy (aged four) quite likes the *Letter*

Factory side of the cassette, in which letters fall sedately down from heaven and can be punched into the back of a truck when they match a static letter on the screen. It's the feedback of graphics, but gives him a kick, and may perhaps be whetting his appetite for letter-shapes (he certainly doodles them half the day long).

But we won't have the other side at any price, though I love it. Here, in *Let's Draw Letters*, the parent or child can select any word, and the machine flashes each one of its letters in turn, drawing them just as a pen would. I'd have thought a child would like to have this aide memoire of how to make

letters. Perhaps you'll have better luck. The children have all liked and consistently asked for GH's *Money Box*, and for weeks everyone seemed to be wholly mesmerised by *Measuring Games*, in which animals can be made to fill relevant spaces by a successively complicated selection of options. It's extraordinary how retentive they are of the codes they have to remember on the keyboard.

We've been playing quite a bit with Goldstar's *Learn About Words*, in which a kind of spelling round ends in a maze game. I'm not altogether sure about this game, which seems to me to

be too simple and repetitive in its early stages, and too difficult in the last. You are either bored by the early bits, or foxed by the final game. Goldstar's *Sketchpad* is very ingenious, and an early introduction to making a computer do jobs (changing shapes, colouring them, etc.). A sketchpad it is not, since the graphics one can make are irredeemably computerish in look. Also, I am a little sceptical of a child old enough to use the thing well being bothered to do it. Acornsoft's *Workshop* is a better bet, in the sense that what it can do is both available and challenging to a child: young children (aged three to

eight, say) can use it to make shapes and change them in various ways, but can do so by remembering very simple techniques which don't require reading skills, and which they seem incredibly well-attuned to.

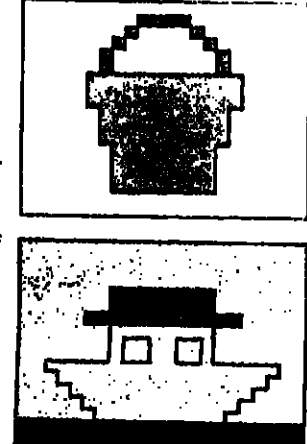
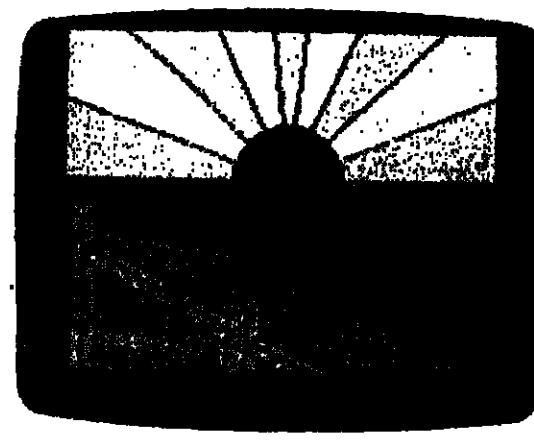
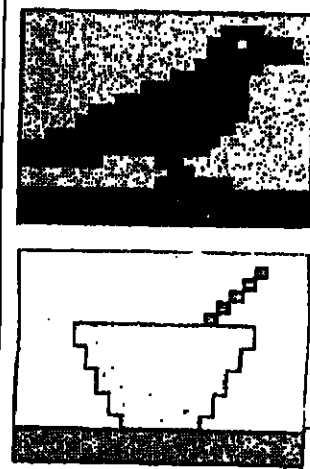
So far, we haven't found anything for the very young which turns us on about numbers. GH's attempt (*Number Games*) seems innately plodding, though we were getting quite keen on *Money Box*. Getting to grips with shapes is rather more fun: Goldstar's *Learn About Shapes* is challenging for the slightly older ones who like to get to grips with pentagons and hexagons (a six-year-old visitor of ours loves it), and rattles through the program regularly, whilst GH's simple *Shape Games* is a quick and easy way of letting youngsters become familiar with complex shapes.

I now have a disk drive, and though I commend them for use with children, you can start, and change, games with far greater, and rather important, spontaneity. Partly because he can get it so quickly on demand, the four-year-old has taken to GH's *Jungle Stories*, which demands some reading skills, and an older child to keep him company. No such hang-ups with the brilliant *Mr T Meets His Match* (GH), in which matching games of increasing richness can be played. So far, everyone, of all ranges of ability, adores this.

The children seem to play with a tape four or five times in the course of their afternoon for it. Then, usually, they go off the thing. I am therefore suspicious of the business of buying tapes or disks. They are ideal library or rental material. Until they are routinely available in some such form, I can't see how the idea of children at home playing computer learning games will take off.

EXTRA CHILD'S PLAY

Richard North and friends try out a selection of computer learning games



Data management

Statpak
Disk for BBC Model B, £30.00 + VAT
University of York Science Education
Group, Heslington, York YO1 3DD.

Statpak is a data management program for scientists. It permits the user to exploit a range of analysis and arithmetic operations to be carried out on files of numerical data and, if used in conjunction with a VELA, also caters for data logging.

A total of 1,024 numbers (made up from eight columns and 128 rows) are allowable in each file. Each one also has a header page which holds the file name (used when saving it on disk), a title (allowing more detail about the file), the date last used and the heading, units and precision of each of the columns in the file.

The predicted six columns can be adjusted to be anything from an integer to five decimal places. The higher the precision of the numbers in a column, the smaller the range of values that can be accommodated.

The User Guide is well presented and provides good details on how to use the various sections of the program. A very useful Quick Reference Guide is also provided. There are six operations incorporated into the *Statpak* facilities: typing in and editing of experimental data; data logging; arithmetic operations on the data; statistical operations on the data; drawing line charts or bar charts of the data; and merging two or more data files.

Typing in and editing the experimental data takes some getting used to, because moving the cursor to various positions in a file involves coping with a number of key presses.

Interpreting Mass Spectra
Disk for BBC Model B and RML computers
Price £9.75 + VAT
University of York Science Education Group, Heslington, York YO1 3DD.

The University of York Science Education Group has produced a set of seven programs on one disk that forms an excellent introduction to the role of mass spectrometry.

The programs introduce the mass spectrometer as a means of detecting isotopes, the calculation of relative atomic masses from isotopic abundances and the calculation of molecular formulas for organic compounds from both high- and low-resolution measurements of relative molecular

mass. The importance of isotopes peaks for organic compounds, the prediction of fragmentation behaviour of organic compounds and the matching of sample spectra against those in a library are also covered. The last unit displays the mass spectrum of any of 87 organic molecules. Each program sets the student a clearly-defined and useful task, and the required keyboard manipulations are simple.

The package is aimed at the A-level chemistry student and fulfils its purpose admirably. Most aspects required

of a data set; correlation coefficient; t-test; chi-squared test; sorting; counting frequencies. With the chi-squared test expected data is not available and this set will have to be created. Little problem was found using all of these facilities although counting frequencies does require care.

The pictorial representation of data is invaluable and the facility for drawing line graphs or bar charts of data makes it effortless. Up to eight data sets can be used as y-variables in line graphs, although, for clarity, it is better to stick to no more than four. For bar graphs a maximum of two data sets for y-variables is available. The background and foreground colours of either type of graph may be changed if required. Graphs can be saved to disk and details are given for their retrieval.

Unfortunately, *Statpak* does not come with a high-resolution printer dump, but the graphs can be printed out with a suitable package. This operation was very impressive, especially towards the data logged from the VELA.

This package has been well produced. Its documentation is detailed and generally very easy to follow. The screen display, in the main, is well laid out; the program seems to be crash-proof; pressing BREAK will crash the program. For the facilities it offers it is not overpriced, although schools may still find £20 hard to come by. My only concern is that in order to master its attributes (and it has many), one needs to use it reasonably consistently. I would, therefore, suggest reasonable thought be made as to the use of the package before its purchase.

Clive Opie

For the masses

mass. The importance of isotopes peaks for organic compounds, the prediction of fragmentation behaviour of organic compounds and the matching of sample spectra against those in a library are also covered. The last unit displays the mass spectrum of any of 87 organic molecules. Each program sets the student a clearly-defined and useful task, and the required keyboard manipulations are simple.

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A new angle

Advanced Mechanics II: Projectiles
By D J Simmons, PF Roxan and P E Nunn
Disk for BBC Model B,
£23.50 + VAT
NELCAL, 1984.



Projectiles is one of a series of three programs (with *Relative Motion* and *Momentum and Impulse*) designed to cover the essential areas of advanced mechanics courses. This program relates well to the topic as taught in many mechanics, applied mathematics and (to a smaller extent) Physics courses to A level. The program is usefully structured in seven parts which are listed on the menu.

First the student can study the paths of projectiles, varying the angle of projection, the initial speed and therefore the range. All paths are clearly traced and can be compared. In addition, a graph showing the variation of range with either angle or initial speed can be brought up on the screen. Option three allows the two components of motion to be separated, with distance-time and speed-time graphs available for a range of initial speeds and angles. The distance-time graph is in fact a displacement-time graph but this seems to be the only mistake with the program.

The next option, entitled 'the parabola of safety', allows the user to aim at a target by varying the angle of projection. Some targets prove to be out of range. This is another illuminating and enjoyable exercise offering a computerized version of experiments

carried out in many a schoolboy's urinal. Projectiles are then allowed up or down an inclined plane, the angle of which can be varied.

I particularly liked the next option which allows the effect of air resistance to be included and even to be varied by the user. The path of the projectile without and with air resistance of different magnitudes can be compared on the same screen display. This is surely simulation at its best, when the user can tamper with the model itself rather than simply altering external factors. The final option of *Projectiles* allows the initial height of projection above the plane to be varied. The paths of the projectile with different angles and speeds can be displayed.

Teachers could relate all this abstract activity to football throwing, pos-shooting, launching ballistic missiles, javelin throwing, returns to the wicket in cricket, or putting the shot. Given the connexion to concrete examples, along with a teacher's help and guidance, this program could be used lower down the school, for example with fourth and fifth year mathematics or physics groups. At the other extreme, the extension material provided in the User's Notes could make the program useful in some first year undergraduate courses.

I found this an excellent program, enjoyable to use, with clear instructions and helpful but not excessive use of colour. With the User's Notes, it offers endless opportunities for student investigation. Its price seems excessive for a program aimed at a small section of A level courses but teachers with imagination could use it more widely to make it a value for money.

Jerry Wellington

monitor is perfectly acceptable if it is so dramatic.

The package is good value for money, but could still be too expensive for hard-pressed science departments, whose budgets are not adequate for the required chemicals, apparatus and textbooks. However, the magic word 'computer' may loosen the purse strings of some heads and education authorities.

My only concern is that topics such as this, which are programming in relative ease, may sometimes receive too much attention from the student, just because using a computer is fun. It is the expense of other areas that may be more important but less programmable.

R Davis

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EXTRA Economic ventures

David Whitehead provides a consumers' report on worthwhile products for economics

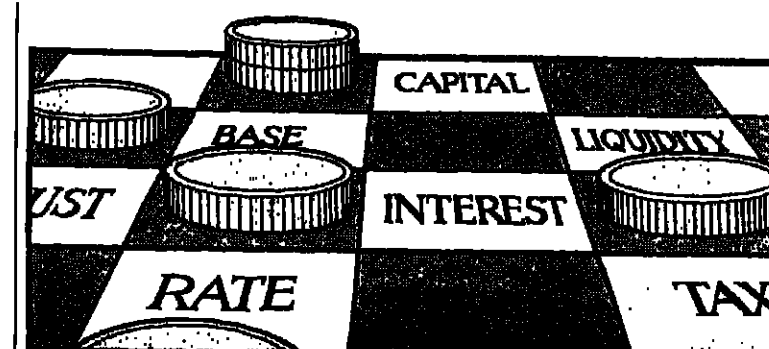


Illustration from 'The Economic Pictorial Banker' (Blackwell)

costs, demand curves, cost-based pricing etc. Unlike some packages, this program is accompanied by a very carefully thought out and helpful tutor's guide.

Unisim is a business management game, in which teams have to make decisions on production, marketing, selling, finance and planning. The objective is to attain a dominant market position, as judged by market share and profit. Tutors may need several hours' preparation to master the simulation's intricacies, and it takes at least six or seven hours to play, possibly over several weeks.

A supplementary package which might accompany most economics courses is *Macroeconomic Database* by K Lumsden and A Scott (Longman, £35), which comprises national income and related data for 25 countries for the period 1959-81, a suite of statistical programs for manipulating the data and for testing hypotheses, and a data manager program which provides an update facility.

Another database which has been compiled from *Regional Trends*, and covers population, occupations, income levels, housing tenure and the ownership of consumer durables is *Regional Statistics* (Longman, 1985, £14.50. Available shortly) by S J Hurd

et al. Fascinating contrasts may be drawn between the students' own region and other parts of the UK.

The latest generation of software is designed for fourth and fifth year classes, and has been developed in collaboration with the Economics Education 14-16 Project. One unit simulates the siting of an industrial plant: *Location - Iron and Steel*, by B Proctor and A Greenwood (Longman, £14.50). Another asks pupils to decide how to allocate labour on an industrial production line: *Workers and Machines*, by A Murley and A Greenwood (Longman, £14.50). Lessons on the local market for housing would be complemented by a simulation on the determination of house prices by P Davies and G Waterworth: *Estate Agent* (Longman, £14.50).

Balance of Payments, by A Anderson (Longman, £14.50), shows how policies of deflation, devaluation and import controls might affect our trade balance. *Break Even*, by P Collard and M White (Longman, £14.50), contains a general utility program and examples of the application of break-even analysis to running a disco and operating a country bus company (The last five units mentioned may be bought in one pack for £35).

A final package from the 14-16

Project is *Teddytronic: Story of a Firm* (Longman, £14.50), in which the students take over the management of a toy firm producing electronically controlled teddy bears. Decisions must be taken on output, labour and wages, price and advertising, and loans, with the object of successful, ie profitable, management.

Also appropriate for this age group is *Making Ends Meet* (Cambridge University Press, £15). Not so much economics as 'life skills', it aims to aid personal budgeting, by having students decide what type of accommodation, transport, social life and holiday they want, constrained by their limited income.

Unfamiliarity with both the simple mechanics of using micros and with the availability of suitable software is rapidly diminishing. But while schools and colleges are now often amply equipped with hardware, exiguous budgets for purchasing materials are severely curtailing take-up. To predict that micros will be a common feature in economics classrooms in five years' time would be optimistic.

Useful addresses:
Beacon, 16 Kingrove Ave, Nottingham NG9 4DQ
BP Educational Service, PO Box 5, Wetherby, W Yorks LS23 7GH
CUP, The Edinburgh Building, Shaftesbury Rd, Cambridge CB2 2RU
Longman Micro Software, 33-35 Tanner Row, York YO1 1JP
Pitmansoft, Pitman Publishing, Southport PR9 9YF
Unilever Education Section, PO Box 68, Unilever Hse, London EC4P 4BQ

Those seeking more information about ways of using micros in the classroom are referred to *Ken Randall's Microcomputers and Teaching Economics* (Longman, 1984) and the chapter by Steve Hurd in *Teaching Economics* (3rd edn: G B J Atkinson (Heinemann Educational, 1985)).

Not so basic

ISO-Pascal ROMs, disk and manuals
Price £69
Acornsoft, Betjeman House, 104 Hills Road, Cambridge CB2 3MJ.

Those of us who loathe BASIC because it is so very difficult to program anything interesting in it in a way that will be comprehensible the next day, will be pleased that Acornsoft have provided a good PASCAL system.

They provide it on a cartridge for the Electron, on a pair of ROMs for the model B, with disk backup, or solely on disk for the 6502 second processor. I hope that this is the way important systems will be packaged for the Beeb in the future.

The manual contains the BS reference document and lists the minor ways their implementation differs, sensible trivial restrictions for the smaller machines, more for the second-processor version. They provide a straightforward context editor with a powerful search and match command. You can search, for example, for all variables with _ as the second character, and not match any isolated occurrences of _.

Language extensions to access operating system commands and assembly code programs are also provided. These are adequate, but a little inflexible. An assembler is not included. Twelve compiler options give considerable flexibility, in particular enabling you to find out whether your program uses non-standard extensions and will therefore run unchanged on any standard implementation.

The introductory manual is exceptionally clearly written.

Acornsoft obviously see their market as those who wish to migrate from BASIC to a reasonable language. However, secondary schools might well consider basing an introduction to computing on this language package. Then those who want to go on to study computer science at university or polytechnic will find that what they have learnt at school will be welcomed at interview and tutorial.

John Laski

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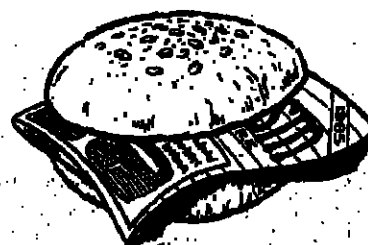
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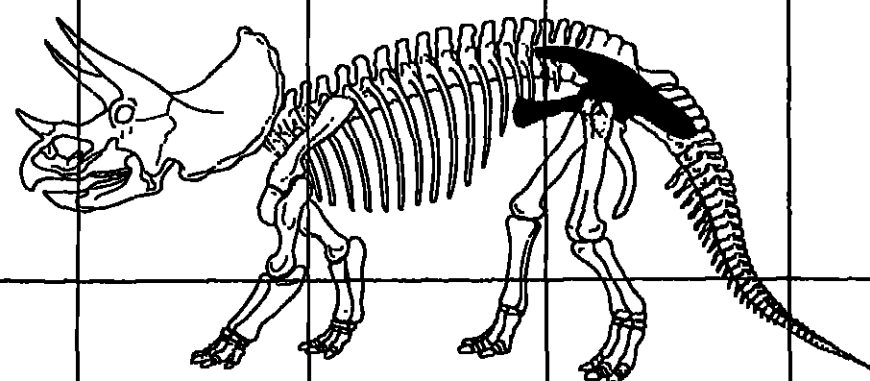
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**Cambridge
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EXTRA



Dino meets micro

John Bald on two programs that explore the communication between computers and children

Town
By Barry Holmes, Ian Whittington and Stephen Fletcher.

Dinosaurs
By Barry Holmes and Ian Whittington. For BBC B, disk or cassette. £16 each + VAT. Cambridgeshire Software House, The Town Hall, St Ives, Huntingdon PE17 4AL.

Town begins with the construction on the screen of a town plan, which can then be used for games based on giving directions. As the "streets" all have to be straight and at right angles to each other, the plan cannot be derived from a real environment, although discussion of this limitation with the children could turn it to advantage and lead to an exploration of real maps and their purposes. The results of such investigations can be fascinating, with primary school children producing work similar in style, though not in accuracy, to the "plan-views" of Tudor map-makers.

The main aim of the program, however, is not to introduce children to maps, but to "explore a number of levels of communication between the computer and the children", and, in the process, among the children themselves. The direction-giving games require close attention to detail and precise wording of instructions, to be

agreed by the group before they are entered. The games range from the simple "Keyword Commands", which involves accurate estimation of distances and offers support if needed, to "complex commands with penalties", which gives nothing away and is played against the clock.

The program is therefore suitable for children of quite a wide spread of age and ability, and is a good example of the way in which a computer can be used to promote group work and the development of spoken language. The games' clear objectives help the children to keep their discussions on target and the whole exercise is far easier to manage than it would be on paper.

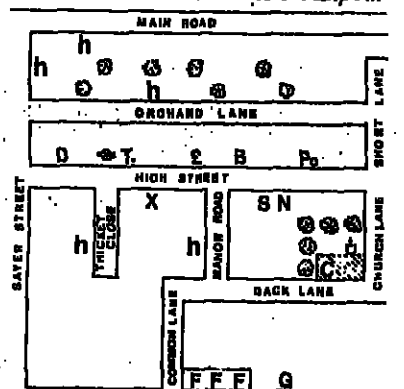
Dinosaurs uses a simplified version of the format of the successful *Expedi-*

tion to Sagqara, and is designed for top infants and first-year juniors. The children first search for a site and then explore it, collecting pieces of dinosaur skeleton. It takes at least two visits to a site to assemble a skeleton, which is then identified using a set of transparent overlay drawings of complete animals.

As with the authors' other archaeological programs, the most valuable work is often done away from the computer, as the children consider the evidence they have found and explore it further in reference books. In *Dinosaurs*, the effect is to use a topic which can easily turn into a rather gruesome picture-show as an introduction to the nature of our knowledge of pre-history and the methods by which it has been obtained.

It would have been better, however, if the authors had included at least one further investigation, perhaps of a pre-historic settlement. As it stands, *Dinosaurs*, like *Town*, is a useful teaching aid, but limited in its scope and requiring quite a lot of supplementary resources in terms of books if it is to be fully effective.

The cost of each of these programs can be roughly equated to a year's tuition for a primary school child and may even exceed it. As they both make pupils think, they may well be worth the investment, although for many schools this will not be an easy decision to reach.



Reaching the equations other programs can't reach

Physics: O Level and CSE Revision
For ZX Spectrum 48K, £7.95
Longman Software.

Perhaps, some software writers are larger drinkers. One section of this program is entitled "Formulae". The accompanying leaflet describes Formulae as a program which "reaches the equations that other programs cannot reach". This is certainly true. The surface area of a sphere is given as $4\pi r^2$. The volume of the sphere is correctly stated but its presentation on the screen would make Archimedes turn in his grave.

$V = \frac{4}{3}\pi r^3$
Not a pretty sight for an O level revisionist, particularly when the program uses black on green.

The program is a whole is attractively packaged for the W J Smith-type market and described as "your key to exam success" in Physics O level or CSE. Clear loading instructions are given and the program is helpfully subdivided into five parts: Text, Formulae, Circuits, Light and Machine. Text is described as "a database covering all the important topics and ideas needed for the main exam syllabus". A database it is not. If this statement were used to advertise the program it would be illegal.

Text is little more than a glorified technical index, merely providing a rather obscure checklist of the topics that the user ought to know. If he or she doesn't know them, the program provides no help.

appropriate examination syllabus would be far more useful to the student than Text, and far less likely to contain spelling mistakes as in "Plimsol line". The parts of the program which do teach the user some Physics are Circuits, Light and Machine. All three are quite enjoyable to use, but between them cover no more than a quarter of any of the main syllabuses. Machine, for example, deals only with levers and pulleys and goes on to show a "Lever at Work" application. Up crops Archimedes again. His law of the lever is applied to a machine which throws stones at castles, no doubt in the city of Syracuse. The user can vary certain conditions to project stones at a castle on the screen. Hardly an up-to-date application of the lever, but I suppose ballistic missiles are timeless.

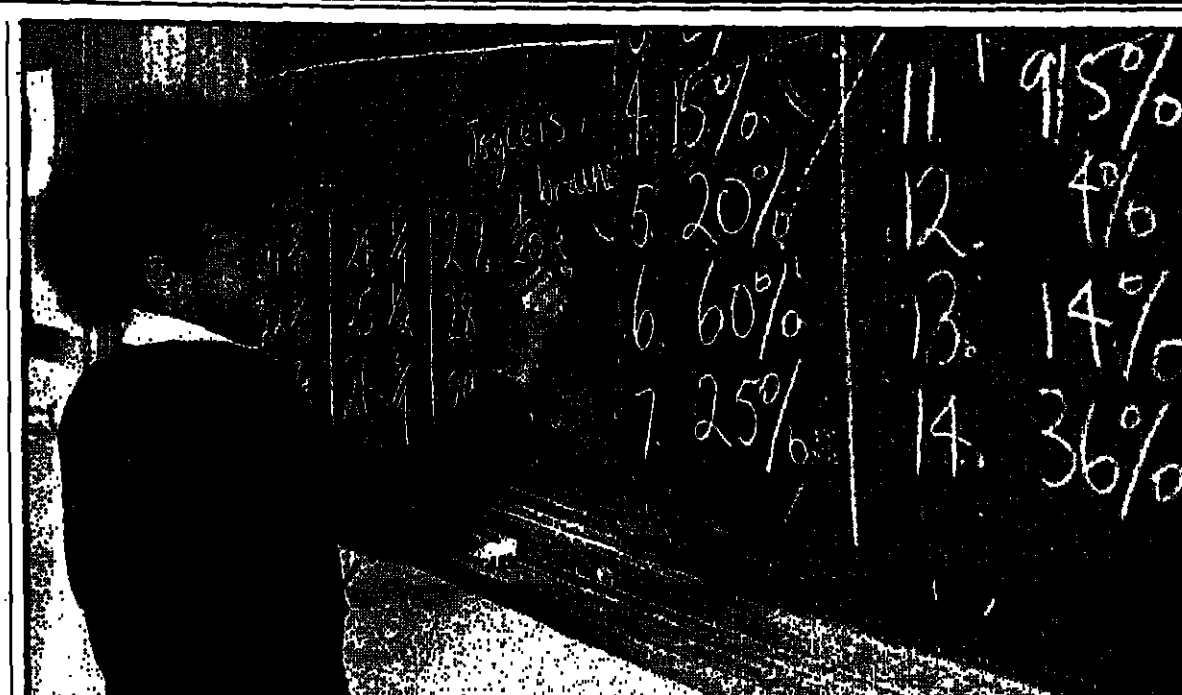
Light appears to cover the bulk of geometrical optics but leaves physical optics untouched. Ray diagrams are covered in detail but, on the home television where this program will be used, they are not very pleasing to the eye. Mirrors and lenses of all kinds are fully dealt with but again the screen presentation is less easy on the eye than the pages of a physics textbook. The third and final section of O level Physics covered is Circuits, which begins by showing Ohm's law in some very simple circuits, and finishes by showing the movement of charges in semi-conductors. The moving charges were far too quick for my own eye but they are probably despicable by younger students.

By discussing only circuits, light and sound machines, the program leaves the user with no direct revision help in any of the following topics: kinetic theory, heat, motion in a straight line, circular motion, forces, atomic physics, radioactivity, electromagnetism, physical optics, wave motion, and sound. To package and present the program as "your key to exam success" is therefore at best misleading.

As exam fever rises again next spring, many a well-meaning but unsuspecting parent will pay £7.95 for this package from High Street shops. The same money would buy that parent an expensive O level Physics textbook and a printed revision guide, or study aid, leaving ample change for a pint of lager which refreshes every student part but is probably not the best investment in the world for software writers. A growing number of O level revision aids are now appearing for the home software market. They raise the question of what a computer and VDU can offer which a book cannot. Four obvious offerings are animation, sound, colour and interaction. This program is only "interactive" in a very limited sense. The sounds it employs are largely irrelevant. Some use is made but it is largely unhelpful. Its use of colour and varying combinations of black, green, yellow, blue and pink can only be described as shocking. On the other hand, a study guide or revision card can offer easier browsing, the chance to flick backwards and forwards, and far less eyestrain than home television three feet from the eye. They can also be used on the bus.

Jerry Wellington

EXTRA



Facts and figures

Paul McGee looks at a selection of maths programs for junior and secondary schools

and product of two matrices produces help on the multiplication of matrices. Even with one answer correct and the other demonstrating a typical algebraic error, the help is the same page about matrix multiplication.

The examination consists of 20 randomly-selected questions to be answered in an hour, with the time shown on screen. Both the tests and the examinations have a scratchpad which is a portion of the screen that can be used for on-screen calculations and jottings.

It is hard to see why the student is not encouraged to use the calculator which will be used in the examination. Jotting notes on the screen seems similarly pointless as they disappeared for ever once the question is recalled. This does not develop good examination habits where the sensible presentation of rough working can be very helpful.

These programs seem to be based on the assumption that candidates for public examinations in mathematics lack knowledge of basic facts and their simple application. Experience suggests it is much likelier that the major problems are in more complex application and in problem-solving skills generally.

Computers are often thought to be very motivating but this approach is generally as dull as the average textbook without the completeness or flexibility. Spending the money on a good revision book would be a much better investment for all but the junks.

Maths Topics 2 contains two programs, *Percentage Families* and *Percentage Snap*, both of which cover the relationships between percentages,

decimals and fractions. *Percentage Families* is an interactive learning program that demonstrates these relationships and gives a visual picture by shading a grid. *Percentage Snap* is a game where students spot these equivalences presented within a table.

Both programs are aimed at the 11-14 age group but could be used with top juniors. Although they would be best used with small groups, they could work well with individuals or classes.

The package includes a brief teachers' handbook and three reproducible worksheets.

Percentage Families works at six levels with the students progressing automatically from level 1 to level 6 as they produce the correct number of relationships. Although the error messages are simple and helpful enough for most pupils, three consecutive errors at levels one or four cause the program to freeze. The teacher can then look at the progress report before deciding what action to take.

The progress report for the teacher does not appear on the screen as an option. This is a pity because pupils should be encouraged to note their own progress.

Given the valuable language work which can be developed by groups of pupils using this program, it is unfortunate that fractions have to be "cancelled" as soon as the pupils start to be successful.

Percentage Snap is a game in which the screen shows 20 labelled windows. Students choose to uncover the contents one by one and score when they recognize two of the same family (a "snap"). Every time they spot all 10 snaps, they are given another page and their score accumulates, but when they fail to spot one, the computer shows it to them and they finish at the end of that page. This apparently simple game is made more difficult for some by the change in pictorial representation from 100 to 20 squares.

Once pupils master the first level, the game gets more difficult and the time limit is progressively reduced. It would be better if the rate of progression were more controllable, but there is thankfully a simple mechanism for switching the sound off.

Overall these two programs provide understanding and reinforcement of a quite specific basic concept which causes difficulty to many pupils. The pack would make a worthwhile contribution to the mathematical resources of any junior or secondary school.

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EPC EDUCATIONAL SOFTWARE CATALOGUE

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Island Logic's *Music System* is prob-
ably the first attempt at a compre-
hensive music package for BBC owners.
Older computers like Apple have had
quite good music systems available for
some years now, and more recent
developments have included music
keyboards which will interface with
other micros including the BBC.

The *Music System* is a very ambi-
tious package, which is entirely soft-
ware-based and uses the BBC's com-
puter keyboard as its sole control. It's
really not one but five separate pro-
grams, each of which is accessed from a
master control screen.

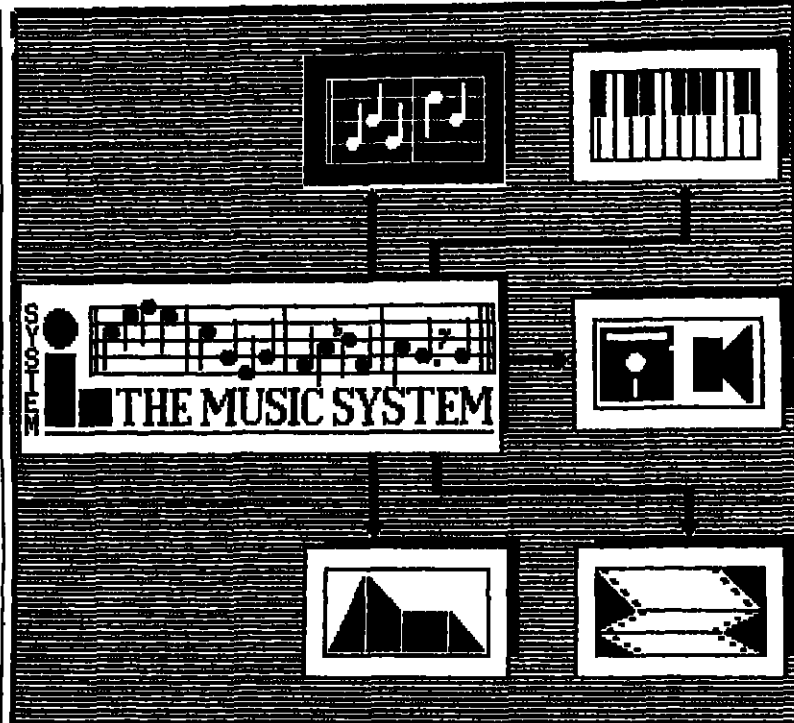
These are an *Editor* (by which music
is written on to treble and bass staves in
conventional notation), a *Keyboard*
incorporating a multi-track recorder/
sequencer, a *Synthesiser*, *Linker* and a
music *Printer*. A separate library disk
contains some sample pieces, and
further files may be created and saved
using the different programs.

Programs are controlled by a
straightforward with a clear chain of
command from the control screen to
each of the modules, and friendly
"pop-up" messages if you make a
mistake. The individual functions are
complex, however, and each needs to
be considered in its own right.

Wage Theory
By Ian Kilbery and Gill Young.
Cost-Benefit Analysis.
By Ian Kilbery.
Available on Apple II, BBC disk and
cassette, RML 3802 disk and cassette
£14.50 each plus VAT.
Longman Software.

I heard a pupil ask yesterday "Is this
only in theory or what?", a question
frequently put about the theory of
marginal revenue productivity. The
program *Wage Theory* helps to teach
this model, by requiring students to act
as employers in various industries,
hiring and firing workers until an
optimum profit-maximizing level is
reached. The market conditions may
be changed to simulate perfect or
imperfect competition, and influences
such as product prices or the activities
of trade unions may be incorporated.
Students often find MRP theory
difficult, so this program is designed to
improve presentation, for example by
the use of bar graphs rather than
continuous functions. A pragmatic
justification is couched in terms of
syllabus requirements. The graphic
display emphasises the key concepts of
marginal cost and MRP by varied
shading of block diagrams, but de-
cisions would be easier if the actual value
of wages were indicated on the y axis.

When students have decided how
many workers to employ (a guess at
first), they are then asked: "Is this the
maximum profit?" If the last man
(should it be "person"?), adds less to
the wage bill, he should not be employed,
and vice versa. Because wages and
revenue are not continuous functions,
students often have to decide that the
correct number of people is being



The *Editor* will enter up to three
parts to a total of 360 notes - not many,
but then longer compositions may be
created by combining up to 10 separate
music files using the *Linker*. Disk
versions of the *Music System* also allow
for a fourth percussion part. Although it
is simple to switch from one voice to
another for entering parts in parallel,
only one part is ever displayed on the
screen at a time. On playback the user
has the choice of either no display
while all parts are heard, or of a single
part moving across the screen as it
alone is played.

Polyphonic display is not possible.
This is a pity - if a pupil is writing in
parts it would be very useful to see all
parts displayed at the same time on
screen and on playback.
Another criticism is that the many
different musical parameters are each
controlled by a very large number of
different keys, which makes writing
fiddly and bothersome. Some sort of
visual display would be controlled by
far fewer keys or even pedals
would be preferable.

The *Keyboard* converts some of the
QWERTY keys into a music
keyboard coupled with a display. A
multi-track recorder is incorporated
with a little ticking metronome. In

record mode previously recorded parts
are heard while the new track is
played, but synchronization is not out
of step with the metronome!

The *Synthesiser* allows the composer
to create shaped sounds which may
subsequently be used in other mod-
ules. It includes a most useful graph
display of the frequency and the
ADSR envelope, and it is easy to see
how changing one of the parameters
alters the graph on the screen. Mod-
ulation parameters can also be control-
led but are too complex for display.

The *Printer* module will work with
most "Epson" compatible printers and
will print out any music composed by
the *Editor* in single voices or in parts
but rather slowly.

Without hardware modifications to
the computer which lacks an audio
output socket, the actual sound of the
system is limited by the small internal
speaker in the computer. For serious
musical use such an adaptation would
be essential, although it may put some
users off. Music teachers who have
access to a BBC Micro may find parts
of the system useful, although it
probably attempts to do too much in
one package.

MICROSPECIAL

"Microspecial", the huge software
package designed to teach basic life
skills, is now available for free
distribution by i.e.s.s. or for sale.

Following last year's criticism of
the Department of Trade and
Industry for allowing a package
produced mainly by volunteer
educationists to be sold at £250 a
copy, the Department of Education
and Science and the Scottish
Education Department have bought
1,000 sets which will be distributed
free this week to local authorities
throughout the United Kingdom. The
i.e.s.s. will have to decide which
schools are to reap the benefit.

For others, however, the price is
still £250 plus VAT or £1,000 for a
licence which allows the i.e.s.s. to
produce as many copies as they want.

The "Microspecial" package
consists of 25 programs on disk for
the BBC Micro, backed up by
documentation and teaching aids. It
is aimed at 14 to 16-year-olds and
covers topics such as managing
money, nutrition, health and safety,
understanding the environment and
organizing leisure and holidays.

The pack was developed by the
Scottish Microelectronics Education
Development Programme in
consultation with the UK
Inspectorate, advisers, curriculum
development officers and the staff of
many colleges and schools.

"Microspecial" can be viewed at
Microelectronics Education
Programme centres and some
teachers' centres. It is being
published by Hill MacGibbon Ltd and
Collins Education.

POPULATION FIGURES

Thanks to financial support from the
United Nations Fund for Population
Activities and the Overseas
Development Administration, Cardiff
University's Population Centre has
developed a population studies software
package. The nine "Poptran" computer
programs are designed for use by
planners in the developed and
developing world, as well as universities
and schools.

"Poptran" breaks down any country's
population figures according to sex and
age, and it can work out age distribution
up to the year 2025. Accurate population
projections can be made for the next
100 years and, by permutating the
fertility/mortality rates, users can assess
the effects of a lower fertility rate and
a higher life expectancy on population
growth. Comparisons can also be made
between countries. For example, a
pyramid breakdown of the current British
population shows that only 3 per cent is
under five years old. The fertility rate is
also low - 1.65. In Kenya, on the other
hand, 22 per cent of the population is
under five and 60 per cent is under 20.
The fertility rate, 8.12, is high but life
expectancy - 56 years - is low. "Poptran"
also points out that the Kenyan
population will double in 18 years.

"The programs will help third world
planners develop a population policy,"
explains "Poptran" project director,
Steve Kinzett. "So we've devised the
software for Apple computers, the kind
most used in developing countries. This
month, 'Poptran' becomes available
overseas - it's to be used during a
population seminar in Botswana. From
there the programs will be taken to
Kenya and Sudan where local planners
will be trained to use them."

The next stage is to adapt the
programs for use on BBC Micros so that
they can be used in British schools.
Education and training establishments in
the third world have also shown interest.

PRIMARY DEPUTY HEADSHIPS

continued

BUCKINGHAMSHIRE
COUNTY COUNCIL
MILTON KEYNES AREA
Group 1 (Equal Opportunity)
DEPUTY HEADTEACHER
Melrose Avenue, Bletchley,
Milton Keynes MK2 6PS

Required from September
1985. Candidates would be
expected to offer excellent
classroom practice through-
out the first school year, com-
mitment to the development
and growth in all aspects of
the school with a specific as-
pect in the Mathematics and
Science areas. A keen in-
terest in involving parents
would be welcome.
Previous applicants will be
automatically reconsidered.

**CORNWALL COUNTY FIRST
SCHOOL**
(Equal Opportunity)
DEPUTY HEADTEACHER
Jonahs, Coffee Hall,
Milton Keynes MK2 6PS

Applications are invited from
experienced teachers for the
post of Deputy Headteacher
with effect from September
1985. The successful candi-
date will be responsible for
indicating any particular cur-
riculum interest and expertise
which will be automatically
reconsidered.

**PEPPER HILL COUNTY
FIRST SCHOOL**
(Equal Opportunity)
DEPUTY HEADTEACHER
Pepper Hill, Bletchley, Milton
Keynes MK2 6PS

Required from September
1985. Following the promo-
tion of the holder of the post
to a Headship, applications
are invited for the Deputy
Headship of the well estab-
lished first school. The
school is a primary school
serving 340 pupils aged
from 4 to 11 years.
Previous applicants will be
automatically reconsidered.

**WOOD END COUNTY FIRST
SCHOOL**
(Equal Opportunity)
DEPUTY HEADTEACHER
Wood End, Bletchley, Milton
Keynes MK2 6PS

Required from April 1985, a
suitably qualified and com-
mitted teacher to take over
the post of Deputy Head-
teacher. The successful candi-
date will be responsible for
indicating any particular cur-
riculum interest and expertise
which will be automatically
reconsidered.

BUCKINGHAMSHIRE
(Equal Opportunity)
DEPUTY HEADTEACHER
Huntingdon Area
CROSSHALL COUNTY
SCHOOL
Great North Road, Huntingdon
Socoon, Huntingdon

Required from Septem-
ber 1985. This Group
4 open plan school has
400 pupils. Closing date
15th March 1985.

Application forms and
further details from the
Headteacher, Closing date
15th March 1985.

This is a re-advertise-
ment, previous applicants
need not re-apply. 110018

CROYDON
LONDON BOROUGH OF
CROYDON
SLESDON (JMS)
Addington Road, South
Croydon, Surrey CR8

Tel: 01-587 4038
Tendish 18th April 1985

Experienced teacher re-
quired for the post of De-
puty Headteacher. The suc-
cessful candidate will be re-
sponsible for the school's
primary school with 185
pupils. Closing date 15th
March 1985. (40110) 110018

Application forms and
further details from the
Headteacher, Closing date
15th March 1985.

Reasonable removal ex-
penses will be paid. Previ-
ous applicants will be
automatically recon-
sidered.

BUCKINGHAMSHIRE
COUNTY COUNCIL
ST GEORGE'S VC
JUNIOR SCHOOL
Woburn, Bedfordshire

Required from September
1985. This Group 3
primary school has 185
pupils. Closing date 15th
March 1985. (40111) 110018

Application forms and
further details from the
Headteacher, Closing date
15th March 1985.

Reasonable removal ex-
penses will be paid. Previ-
ous applicants will be
automatically recon-
sidered.

BUCKINGHAMSHIRE
COUNTY COUNCIL
ST GEORGE'S VC
JUNIOR SCHOOL
Woburn, Bedfordshire

Required from September
1985. This Group 3
primary school has 185
pupils. Closing date 15th
March 1985. (40111) 110018

DEVON

Required as displayed adver-
tisement on Page 62. 110013

ESSEX
ABBOTS HALL INFANT
SCHOOL
Abbotts Drive, Stanford-le-
Maze, Essex SS16 3JH

Required from September
1985. This Group 4
primary school has 185
pupils. Closing date 15th
March 1985. (40110) 110018

Application forms and
further details from the
Headteacher, Closing date
15th March 1985.

Reasonable removal ex-
penses will be paid. Previ-
ous applicants will be
automatically recon-
sidered.

WALSALL
METROPOLITAN BOROUGH
COUNCIL
RACIALETTES R.C.
PRIMARY SCHOOL
Nursery Unit, Racialette
Road, Walsall

Required from September
1985. This Group 4
primary school has 185
pupils. Closing date 15th
March 1985. (40110) 110018

Application forms and
further details from the
Headteacher, Closing date
15th March 1985.

Reasonable removal ex-
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automatically recon-
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Road, Walsall

Required from September
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WALSALL
METROPOLITAN BOROUGH
COUNCIL
RACIALETTES R.C.
PRIMARY SCHOOL
Nursery Unit, Racialette
Road, Walsall

STOCKPORT

Required as soon as possible
DEPUTY HEADTEACHER
St. George's Church of
England Primary School
(Equal Opportunity)
St. George's Church of
England Primary School
St. George's Church of
England Primary School

Required from September
1985. This Group 4
primary school has 185
pupils. Closing date 15th
March 1985. (40110) 110018

Application forms and
further details from the
Headteacher, Closing date
15th March 1985.

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STOCKPORT
METROPOLITAN BOROUGH
COUNCIL
ST. GEORGE'S CHURCH OF
ENGLAND PRIMARY SCHOOL
(Equal Opportunity)
St. George's Church of
England Primary School
St. George's Church of
England Primary School

Required from September
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St. George's Church of
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St. George's Church of
England Primary School

Required from September
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Headteacher, Closing date
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COUNCIL
ST. GEORGE'S CHURCH OF
ENGLAND PRIMARY SCHOOL
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St. George's Church of
England Primary School
St. George's Church of
England Primary School

Required from September
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Headteacher, Closing date
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St. George's Church of
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St. George's Church of
England Primary School

Required from September
1985. This Group 4
primary school has 185
pupils. Closing date 15th
March 1985. (40110) 110018

Application forms and
further details from the
Headteacher, Closing date
15th March 1985.

CAMBRIDGESHIRE

Required as displayed adver-
tisement on Page 62. 110013

ESSEX
ABBOTS HALL INFANT
SCHOOL
Abbotts Drive, Stanford-le-
Maze, Essex SS16 3JH

Required from September
1985. This Group 4
primary school has 185
pupils. Closing date 15th
March 1985. (40110) 110018

Application forms and
further details from the
Headteacher, Closing date
15th March 1985.

SECONDARY HEADSHIPS

NORTHAMPTONSHIRE

KINGSBROOK SCHOOL
Stratford Road,
Deanshanger, Milton
Kings, MK15 6HN

APPOINTMENT

HEADTEACHER GROUP 9

Applications are invited for the post of Headteacher at Kingsbrook School, a comprehensive school, 11-18 Comprehensive, 54 Sixth Form, 1985. The school was opened in 1958 and was re-organised as a Comprehensive School in 1982 with the addition of a Sixth Form in 1984.

Kingsbrook School is now well equipped to provide both the full range of traditional school subjects and also to respond to the changing needs of society. The village at Deanshanger, is situated in a rural setting close to the Northamptonshire - Buckinghamshire border. A number of surrounding villages.

The appointment will be from 1 September 1985. Application forms and further particulars are available from County Education Officer (Mrs. D.L. Northampton House, Northampton, NN1 1JY. Closing date 15th March 1985. (40173) 130010

Deputy Headships

Second Masters/Mistresses

AVON COUNTY

FAIRFIELD GRAMMAR

1. FAIRFIELD GRAMMAR SCHOOL, BISHOP CROFT, FAIRFIELD, BRISTOL BS6 5JW. Headmaster: Mr. A. Barker. 2. FAIRFIELD GRAMMAR SCHOOL, BISHOP CROFT, FAIRFIELD, BRISTOL BS6 5JW. Deputy Head (Group 9). Successful candidates will be expected to have experience in curriculum development and the school's role in the community together with having responsibility for share of school administration. Precise specification of job (see enclosed) and application to the Headmaster by 15th March 1985. Please give full c.v. and references. Avon is an equal opportunity employer. 130012

CINGOR SIR DYFED COUNTY COUNCIL

Head of Department (Scale 3)

1. PEMBERLEY SCHOOL, BUSH, PEMBROKE SA71 4HL (Group 13)

Head of Department (Scale 3)

2. YBOL UNCHRAID LAMBERN POINT STEFFAN BAW 7BX (Group 10)

Head of Department (Scale 3)

3. YBOL GYFUR EMLYN, NEWCASTLE EMLYN SA58 9LN (Group 9)

Head of Department (Scale 3)

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95. YBOL GYFUR EMLYN, NEWCASTLE EMLYN SA58 9LN (Group 9)

Head of Department (Scale 3)

96. YBOL GYFUR EMLYN, NEWCASTLE EMLYN SA58 9LN (Group 9)

Head of Department (Scale 3)

97. YBOL GYFUR EMLYN, NEWCASTLE EMLYN SA58 9LN (Group 9)

Head of Department (Scale 3)

98. YBOL GYFUR EMLYN, NEWCASTLE EMLYN SA58 9LN (Group 9)

Head of Department (Scale 3)

99. YBOL GYFUR EMLYN, NEWCASTLE EMLYN SA58 9LN (Group 9)

Head of Department (Scale 3)

100. YBOL GYFUR EMLYN, NEWCASTLE EMLYN SA58 9LN (Group 9)

Head of Department (Scale 3)

101. YBOL GYFUR EMLYN, NEWCASTLE EMLYN SA58 9LN (Group 9)

Head of Department (Scale 3)

102. YBOL GYFUR EMLYN, NEWCASTLE EMLYN SA58 9LN (Group 9)

Head of Department (Scale 3)

103. YBOL GYFUR EMLYN, NEWCASTLE EMLYN SA58 9LN (Group 9)

Head of Department (Scale 3)

104. YBOL GYFUR EMLYN, NEWCASTLE EMLYN SA58 9LN (Group 9)

Head of Department (Scale 3)

105. YBOL GYFUR EMLYN, NEWCASTLE EMLYN SA58 9LN (Group 9)

Head of Department (Scale 3)

106. YBOL GYFUR EMLYN, NEWCASTLE EMLYN SA58 9LN (Group 9)

Head of Department (Scale 3)

107. YBOL GYFUR EMLYN, NEWCASTLE EMLYN SA58 9LN (Group 9)

Head of Department (Scale 3)

108. YBOL GYFUR EMLYN, NEWCASTLE EMLYN SA58 9LN (Group 9)

Head of Department (Scale 3)

109. YBOL GYFUR EMLYN, NEWCASTLE EMLYN SA58 9LN (Group 9)

Head of Department (Scale 3)

110. YBOL GYFUR EMLYN, NEWCASTLE EMLYN SA58 9LN (Group 9)

Head of Department (Scale 3)

111. YBOL GYFUR EMLYN, NEWCASTLE EMLYN SA58 9LN (Group 9)

Head of Department (Scale 3)

112. YBOL GYFUR EMLYN, NEWCASTLE EMLYN SA58 9LN (Group 9)

Head of Department (Scale 3)

HIGHSHORE (M) (MLD)

SECOND LANGUAGE

Roll: 50
HENDERSON: Mrs. Y. Condon
 Required scale: Scale 263 experienced
 class teacher with responsibility for Environmental Studies and Science. An enthusiastic teacher who will develop a sound school policy and work closely with other teachers sharing higher expertise. Required scale: 263 to develop the resources within the school. Special schools experience an advantage. Visits essential. Re-advertisement. JS.

MORTIMER (DEL)
Dingley Lane, Woodfield
 Ave. SW 14 143
 Tel: 01769 86355
 Roll: 130
 H. 1/1/11
 T. 1/1/11
 Required scale: T. 1/1/11
 Required scale: Scale 355 teacher for Curriculum Resources and A.V.A. Teaching
 Specialist teacher. Interested in special education rather than formal qualification. Re-advertisement.

NANSEN (M) (Visually Impaired)
 Welton Road, Seintgate Lane
 Plumstead, SE18
 Tel: 01855 75355
 Roll: 31
 Headmistress: Mrs B. A. Brandridge

ary Schools, experience and some

WEAVERS FIELDS (EBD)
Maple Street, E2 6HW
Tel: 01-739 6321
Roll: 50 (All age, mixed)
Inclusivity: Mrs. A. Chatfield
Recognised: Specialised Remedial
Teacher (Scale 255), to work in well

MAXILLARY IMPERFORATE CLEFT

Scale 1 Post

JOHN KEATS (DEL) (M)
Adelaide Road, NW33NT
Tel: 01-722 0222
Roll: 97
Headmaster: W. Masters
Franklin Delano Roosevelt (M) (PH)
Roll 81
Tel: 01-722 4490

other professionals, and a chance to see the development of an ext

Part-time Post

THURLOW PARK (Motor Impaired)
 Elmcourt Road
 West Norwood, SE27
 Tel: 01-670 3973
 Roll; 23
 Required (amp 0.2) (Scale 1) plus 55
 creative teacher to assist with craft &
 woodwork on a Tuesday in a well ap-
 pointed aircraft room where we nurture
 the enthusiasm of individual pupils &
 extend their skills wherever possible: a

A number of posts have been created for experienced nursery teachers.

SOUTHFIELDS (SN)
Merion Road, SW18 5JU
Tel: 01-870 0171
Roll: 1300 (including PHU)
Headmaster: Roger Wood
Required from Easter or September 1988
Teacher-in-Charge of the Partially Ho-
log Unit Scale 3 plus SSA. An experience
and well qualified teacher of the deaf is
required to lead a team of four other fu-
ture staff responsible for up to 25 child-
(Re-advertisement), JS.

CREOLA

OTHER APPOINTMENTS

Studies with the responsibility
ing examinations — Internal

PRIMARY/SECONDARY SCHOOLS IN LAMBETH
Required asap. Qualified experience teachers for day-to-day supply teaching in junior, infant and secondary schools in Division 9 (L.B. of Lambeth). Opportunities for full-time, part-time or occasional supply work are available. Application form available from Teaching Staff Section, Divisional Office 9, 50, Acra Lane, SW 5SS. (Tel: 01-274 6288; Ex: 236/237).

**SCALE 2
TEACHER OF MUSIC**
Required for Summer Term 1985. Scale 2 teacher of music for a school with 100 pupils.

1SLD) (SCU) ...
Temperamente afi

at instrumental teaching projects in conjunction with the Centre for Young Musicians. Some time will be spent on other CYM projects at the discretion of the Director of the Centre and in consultation with the Music Inspectorate. Application form and further details from E0731, Room 70, County Hall, London SE1 7PB Tel: 01-433 4882. Closing date 15 March 1983.

BERKSHIRE
EASTHAMPTON
SCHOOL
Easthamptstead 1
Wokingham, Berks
30F
Comprehensive
140 plus Sixth Form
1985, 1986, 1987
1985, HEAD OF
TICS 18scale 4
arnors are seeki
Wellingham, Berks
has a first class
achievement as
who has proven
a well qualified
Further details
receipt of a tal
Wokingham (07
in Wokingham
Principal,
Park School,
with full c.v. &
of two referees
Closing date
An Equal Opp
player. (734359)

BURY

EDUCATION D
HEAD OF MAT
(Scale 4) Requir
ST. JOSEPH'S
SCHOOL
Sandgate Road
Manchester M20
For 1st Sept
Catholic Teacher
required.
Further application
from and return
Head Teacher
Box 115, March
(40075)

HERTFORDSH
HILLDES SCH
Hillside Avenue
Borehamwood
Required Sept
Graduate
MATHEMATIC
15 - 18 Mixed
This core sub

Certificate for
Suitably qualified

and in Mesomys including C.A. riculum, and C. Apoll by master, with releases, a torate in its curricula including games (40883)

ATION COMM
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POOLS
 Road, Torpoint, Cornwall

and in the many associate

the 16+ Music syllabus (S
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well maintained.
is from the Headteacher
scale 1.
ation is required from Sep
excellent games record
it would be expected to m
its curriculum and also ha
many successful outdoor
te of Edinburgh Award, A
is from the Headteacher

oup. No. 5.

Education Office, Carlsbad, California. Reports to the Headteacher of the school.

KNOWSLEY

BROOKFIELD
COMPENSATIVE
Bracknell Avenue
Southdene, Kirby
Newcastle
(1000 Ec and GPs aged 11
18. SPA payable)
Required for 1st September
1985
SCALE : French Teacher
Applications by letter with
full c.v. and names of two
references to the Headteacher
at the school by 15th March
1985. (29036) 13562

The Governors of this School are seeking qualified teachers to teach Catholic Science, English, Social Studies, History, Latin, Spanish, French, Music, Art, Physical Education, and Health. A well-qualified graduate student may also be considered to teach the subject thoroughly enough to assume the age and ability range. The successful candidate will need to be required to share in the teaching of RELIGIOUS EDUCATION.

A well-qualified graduate student may also be considered to teach FRENCH (Grade 9) to the age and ability range. The successful candidate will need to be required to share in the Year SPANISH set for one year only.

This is an opportunity to join the staff of a very popular school.

Grammar to Comprehensive
 in 1977 and continues to re-
 cruit pupils from many parts
 of the Westminster Diocese.
 Candidates are asked to
 write/callphone for applica-
 tion forms and to note that
 all are welcomed. The
 closing date is 8th March.
 (34265) 13362

for Summer Session only as replacement teacher for a teacher of same subject.

Scale 1 EXPERIENCE
TEACHER OF FRENCH and **TEACHER OF SPANISH** must have completed 1 year of college work in school to C.B.E. and 1 year at college level. A teacher only able to teach French will be considered.

Application forms are available from the Director of S.S.C. from the Headquarters to whom they should be returned. It is the policy of the S.S.C. to promote local employment opportunities and consideration will be given to applicants who are residents of the community. A qualified applicant regardless of disability, sex, race, or religion will be considered.

134377 134378

umshire

to join a well established Department of Sixth Form work also.

**SCHOOL, Carlton Road,
YO 11 1B**
and 'O' level standard with lower
ment of 4 teachers.

**or,
11 Beechdale Road, Sthoroug,
Y**
or. Successful candidates will be

ment.
ON Beethde Road, Billborough.
 (a)
ment: Successful candidate will be
Department and the curriculum
teaching.
)- Teacher of the Deaf,
Man Hill, Worsnop,
Teacher of the deaf, preferably with
ring hearing impaired pupils in
a language work with individual
(14004)

27QP



EAST SUSSEX
UCKFIELD SCHOOL
Downsview Crescent,
Uckfield TN22 3DT

18. Roll: 1,353
Required from September:
Chemistry Teacher (Scale 1)
Relocation grants available
in approved cases.
Application forms (see
please) from the Head
Teacher. (29295) 134822

ESSEX
DAVENANT FOUNDATION

[illegible]

**GLOUCESTERSHIRE
COUNTY COUNCIL
EMPLOYMENT OPPORTUNITY
(EMPLOYER)**
GLoucester School
GLoucester GL5 4QP
On 29th April, 2003, the Headmaster will be on roll and due to maternity leave from 29th April for probably remainder of Summer holidays. The Headmaster is a qualified teacher of Physical Sciences to work with the Head of the Department of Teaching physics to examine and select candidates for the Headmaster's School (HMS) (440631) 154952

**GLOUCESTERSHIRE
COUNTY COUNCIL
EMPLOYMENT OPPORTUNITY
(EMPLOYER)**
GLoucester School
Newport
The Sciences Department will be specialist (Grade 1) for September 2003. The post will provide an ideal opportunity for a qualified young graduate to join a strong established rural comprehensive school (1300 on roll) on a full time basis for 1 year (no term for) to the Headmaster's School (HMS) (440631) 154952

sence of this advertisement.
 (24356) 134822

HAMPSHIRE
THE VVNE SCHOOL
 Vyne Road, Basingstoke RG2
 2BS
 11-16 Mixed Comprehensive
 N.O.R. 950
 Bus route 1 photo Special
 Schools. (29044) 134822

ire
 mail



at September 1985 unless
date is 14th March 1985.

Headteacher at the school.

MILLFIELD

says (1070 on Roll)

PS HIGH
(Roll: 11-18)

A LEVEL - ABILITY TO
SUBJECTS TO LOWER

HIGH
(0 on Roll: Boys)

FRENCH (GRADUATE
ply

R.C. HIGH (SPECIAL
all
possible)
SCHOOL WITH PHYSICAL
SCS (COMPUTER SCI-
C.E. HIGH (AIDED)
1:1-16 mixed)
(14088)

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1408

WEST MIDLANDS
SAINT MARTIN'S

S. C. HILL
 Solihull
 Independent Day School
 For Girls
 320 Girls - Q. S. A.
 GRADE 8 POST -
 CHEMISTRY/MATHEMA-
 TICS
 Required for September
 two well qualified scientists
 to teach Chemistry
 throughout Main School to
 Level 10 and to assist in
 the teaching of Mathe-
 matics.
 Letters of Application,
 together with Curriculum
 vitae, names and ad-
 dresses of two referees
 should be sent to the
 Headmaster by 8th March
 85, (40101) 184824

CONCLUSIONS

ESQUIRE
RYAN OATE COLLEGE
 Brighton Campus, Brighton,
 phone CH3 680
 fax 01323 338077
 Administrator: M.B. Fletcher,
 01323 338077
 including 11-18
 Independent Co-Ord Day
 1980. Opened in 1977
OF TECHNOLOGY/
COMPUTER EDUCATION
 1980. Required for
 September 1985
 This new post requires ex-
 perience and enthusiastic
 students to be responsible
 Heads of the Faculty of
 Technology and Leadership
 development of technical
 Computer education.
 Experience of organising
 courses at the full
 degree, together with proven

Computer experience
ability to teach Res

and Engineering Drawings is essential for applications by letter to Headquarters, giving C and two referees. Further details are available on request. Closed, addressed envelopes closing date for applications 18th March 1955.

more than by Subject Classification

heads of Department

MENT

ASTON SCHOOL FOR

IRLS

Brook, Kent BR2

acquired September 1950

OF UNITED KINGDOM

particular interest

English

English

...quite a few quite qualified

Apply in writing to: The Headmaster, The Grammar School, The names of two referees. (40821) 1961

TEACHING ASSISTANTS

SHROPSHIRE

Applications are invited for positions which will become available in the following circumstances: (a) when a permanent teacher is absent from the school; (b) at the commencement of the Summer Term 1962, and (c) when a permanent teacher is absent from the Autumn Term 1962. The successful candidate will be employed on a full-time basis although they are not necessarily required to teach in a school. No educationally or administratively qualified person is eligible for appointment. It is essential that the candidate should be at least 18 years of age and be capable of undertaking the duties of the post. The successful candidate will be required to complete a period of probation of 12 months. The successful candidate will be required to complete a period of probation of 12 months. The successful candidate will be required to complete a period of probation of 12 months.

For further information, which should be accompanied by a curriculum vitae and a recent photograph, please send to the Headmaster, The Grammar School, The names of two referees. (40821) 1961

SLI EXP. 19

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COLLEGES OF FURTHER EDUCATION

continued

BARKING AND DAGENHAM

DEPARTMENT OF INDUSTRIAL ENGINEERING

Lecturer (Grade II) for Motor Vehicle, Craft Studies and Practical Subjects. Salary Scale: £2,942-£11,350 p.a. inclusive.

The person appointed will be required to teach Motor Vehicle, Craft Studies and Practical Subjects in both the classroom and workshop environment. The appointment involves teaching full time, part time and school leavers. The City and Guilds 381 Motor Vehicle Craft Studies Certificate is essential. The person appointed will be required to teach Motor Vehicle, Craft Studies and Practical Subjects in both the classroom and workshop environment. The appointment involves teaching full time, part time and school leavers. The City and Guilds 381 Motor Vehicle Craft Studies Certificate is essential.

Considerable practical industrial experience is essential and an interest in Mechanical Engineering in general is desirable. Minimum salary for the post is £2,942 p.a. The person appointed will be required to teach Motor Vehicle, Craft Studies and Practical Subjects in both the classroom and workshop environment. The appointment involves teaching full time, part time and school leavers. The City and Guilds 381 Motor Vehicle Craft Studies Certificate is essential.

Application forms and details from: The Administrative Officer, Barking College of Further Education, Barking, Essex RM7 7XU. Salary scale £2,942-£11,350 p.a. inclusive. 14 days of the appearance of this notice. 280086

DORSET

WYEMOUTH COLLEGE

Resources Lecturer. Please see display under Colleges of Further Education. (34178) 280058

Humberdale County Council

Hull College of Further Education

Principal: A Tuck BSc CEng MIEE MIERE FRSA

HM PRISON (HULL) - EDUCATION DEPARTMENT

Head of Department

Grade II

A person of energy and enthusiasm is required to head an Education Department in a Prison. The Education Department includes sections in Open University, 'A', 'O' and RBA classes, Business Studies, Remedial Education, Individual tuition within certain parts of the prison, and vocational training in Furniture Craft and Tailoring.

The person appointed should be a graduate of a British University who has experience in the management of Adult Education with considerable experience of an Education Department within a prison. The Education Officer is responsible to the Governor of the prison for the security and operational aspects of the Department. The Education Officer is responsible to the Principal of the College for the Education programme and for the Lecturers in the Prison.

The post is tenable from 1st September 1985. Salary: Head of Department Grade II £12,522-£14,116 per annum.

Starting salary is dependent upon age, qualifications and experience.

Lecturer

Grade II

Experienced and suitably qualified Lecturer required for 1st September 1985 to teach within the Prison Education Department.

The Lecturer would be responsible for the general running of the Vocational Training within this establishment. A knowledge of computing would be advantageous.

Salary: Lecturer II £7,548-£12,099 per annum.

The starting salary is dependent upon age, qualifications and previous experience.

DEPARTMENT OF CATERING AND CARING SERVICES

Lecturer II

Required for September 1985 to contribute to the teaching of two of the following subjects to craft and diploma students: Food Services, Front Office, Housekeeping.

Relevant qualifications, appropriate industrial and teaching experience essential.

Salary: Lecturer Grade II £7,548-£12,099 per annum.

Starting salary dependent upon age, experience and qualifications.

Application forms and further particulars for all posts can be obtained from The Administrative Officer (Personnel), Hull College of Further Education, Queens Gardens, Hull, North Humberside. Telephone (0482) 29943; Ext. 236.

Closing date: 15th March 1985.

All applicants are considered on the basis of their suitability for the job irrespective of disability, race, creed, sex or marital status. Disabled candidates whose applications have the written support of their D.O. will be guaranteed an interview.

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BRENT

LONDON BOROUGH OF BRENT

TECHNOLOGY

DEPARTMENT OF ELECTRICAL ENGINEERING

LECTURER II IN INSTALLATION

Required for September 1985 to teach some of the following subjects: Electrical Installation, theory and practice on a wide range of Courses.

Salary Scale: Lecturer II £2,555-£13,136 p.a. inclusive.

Applicants should be suitably qualified and preferably have teaching experience. Further details from: The Principal, Brent College of Further Education, Brentford, London W9 0XN. Tel: 01-831 3611; returnable within 14 days. 280026

CLEVELAND

LONDON BOROUGH OF CLEVELAND

TECHNOLOGY

LECTURER IN COMMUNICATIONS

Required for September 1985 to teach some of the following subjects: Communications, theory and practice on a wide range of Courses.

Salary Scale: Lecturer II £2,555-£13,136 p.a. inclusive.

Applicants should be suitably qualified and preferably have teaching experience. Further details from: The Principal, Cleveland College of Further Education, Cleveland, London W9 0XN. Tel: 01-831 3611; returnable within 14 days. 280026

DORSET

WYEMOUTH COLLEGE

Resources Lecturer. Please see display under Colleges of Further Education. (34178) 280058

Humberdale County Council

Hull College of Further Education

Principal: A Tuck BSc CEng MIEE MIERE FRSA

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Grade II

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Relevant qualifications, appropriate industrial and teaching experience essential.

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Starting salary dependent upon age, experience and qualifications.

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Closing date: 15th March 1985.

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DERBYSHIRE

CHESTERFIELD COLLEGE

TECHNOLOGY

LECTURER GRADE I IN ELECTRICAL ENGINEERING

Required for September 1985 to teach some of the following subjects: Electrical Engineering, theory and practice on a wide range of Courses.

Salary Scale: Lecturer I £2,555-£13,136 p.a. inclusive.

Applicants should be suitably qualified and preferably have teaching experience. Further details from: The Principal, Chesterfield College of Further Education, Chesterfield, Derbyshire. Tel: 01-831 3611; returnable within 14 days. 280026

DEVON

SOUTH DEVON COLLEGE OF FURTHER EDUCATION

TECHNOLOGY

LECTURER IN COMMUNICATIONS

Required for September 1985 to teach some of the following subjects: Communications, theory and practice on a wide range of Courses.

Salary Scale: Lecturer II £2,555-£13,136 p.a. inclusive.

Applicants should be suitably qualified and preferably have teaching experience. Further details from: The Principal, South Devon College of Further Education, South Devon, Devon. Tel: 01-831 3611; returnable within 14 days. 280026

DORSET

WYEMOUTH COLLEGE

Resources Lecturer. Please see display under Colleges of Further Education. (34178) 280058

Humberdale County Council

Hull College of Further Education

Principal: A Tuck BSc CEng MIEE MIERE FRSA

HM PRISON (HULL) - EDUCATION DEPARTMENT

Head of Department

Grade II

A person of energy and enthusiasm is required to head an Education Department in a Prison. The Education Department includes sections in Open University, 'A', 'O' and RBA classes, Business Studies, Remedial Education, Individual tuition within certain parts of the prison, and vocational training in Furniture Craft and Tailoring.

The person appointed should be a graduate of a British University who has experience in the management of Adult Education with considerable experience of an Education Department within a prison. The Education Officer is responsible to the Governor of the prison for the security and operational aspects of the Department. The Education Officer is responsible to the Principal of the College for the Education programme and for the Lecturers in the Prison.

The post is tenable from 1st September 1985. Salary: Head of Department Grade II £12,522-£14,116 per annum.

Starting salary is dependent upon age, qualifications and experience.

Lecturer

Grade II

Experienced and suitably qualified Lecturer required for 1st September 1985 to teach within the Prison Education Department.

The Lecturer would be responsible for the general running of the Vocational Training within this establishment. A knowledge of computing would be advantageous.

Salary: Lecturer II £7,548-£12,099 per annum.

The starting salary is dependent upon age, qualifications and previous experience.

DEPARTMENT OF CATERING AND CARING SERVICES

Lecturer II

Required for September 1985 to contribute to the teaching of two of the following subjects to craft and diploma students: Food Services, Front Office, Housekeeping.

Relevant qualifications, appropriate industrial and teaching experience essential.

Salary: Lecturer Grade II £7,548-£12,099 per annum.

Starting salary dependent upon age, experience and qualifications.

Application forms and further particulars for all posts can be obtained from The Administrative Officer (Personnel), Hull College of Further Education, Queens Gardens, Hull, North Humberside. Telephone (0482) 29943; Ext. 236.

Closing date: 15th March 1985.

All applicants are considered on the basis of their suitability for the job irrespective of disability, race, creed, sex or marital status. Disabled candidates whose applications have the written support of their D.O. will be guaranteed an interview.

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GLOUCESTERSHIRE

TECHNOLOGY

LECTURER GRADE I IN ELECTRICAL ENGINEERING

Required for September 1985 to teach some of the following subjects: Electrical Engineering, theory and practice on a wide range of Courses.

Salary Scale: Lecturer I £2,555-£13,136 p.a. inclusive.

Applicants should be suitably qualified and preferably have teaching experience. Further details from: The Principal, Gloucestershire College of Further Education, Gloucestershire. Tel: 01-831 3611; returnable within 14 days. 280026

GRAMPIAN

REGIONAL COUNCIL

MORAY COLLEGE OF FURTHER EDUCATION

TECHNOLOGY

LECTURER II IN BUSINESS STUDIES

Required for September 1985 to teach some of the following subjects: Business Studies, theory and practice on a wide range of Courses.

Salary Scale: Lecturer II £2,555-£13,136 p.a. inclusive.

Applicants should be suitably qualified and preferably have teaching experience. Further details from: The Principal, Moray College of Further Education, Moray, Grampian Regional Council. Tel: 01-831 3611; returnable within 14 days. 280026

HARINGEY

LONDON BOROUGH OF HARINGEY

TECHNOLOGY

LECTURER IN COMMUNICATIONS

Required for September 1985 to teach some of the following subjects: Communications, theory and practice on a wide range of Courses.

Salary Scale: Lecturer II £2,555-£13,136 p.a. inclusive.

Applicants should be suitably qualified and preferably have teaching experience. Further details from: The Principal, Haringey College of Further Education, Haringey, London. Tel: 01-831 3611; returnable within 14 days. 280026

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HARINGEY

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HAMPSHIRE

LONDON BOROUGH OF HAMPSHIRE

TECHNOLOGY

LECTURER GRADE I IN ELECTRICAL ENGINEERING

Required for September 1985 to teach some of the following subjects: Electrical Engineering, theory and practice on a wide range of Courses.

Salary Scale: Lecturer I £2,555-£13,136 p.a. inclusive.

Applicants should be suitably qualified and preferably have teaching experience. Further details from: The Principal, Hampshire College of Further Education, Hampshire. Tel: 01-831 3611; returnable within 14 days. 280026

HARTFORDSHIRE

WATFORD COLLEGE

TECHNOLOGY

LECTURER GRADE I IN ELECTRICAL ENGINEERING

Required for September 1985 to teach some of the following subjects: Electrical Engineering, theory and practice on a wide range of Courses.

Salary Scale: Lecturer I £2,555-£13,136 p.a. inclusive.

COLLEGES OF FURTHER EDUCATION

LONDON

GOLDSMITHS' COLLEGE SCHOOL OF EDUCATION

TWO POSTS OF LECTURER/SENIOR LECTURER IN DESIGN AND TECHNOLOGY

Applications are invited for two posts to commence on September 1st, 1985.

The person appointed should be experienced in the field of three-dimensional design in a range of materials, and have recent significant school-teaching experience. The posts are in the following areas:

(i) Graphic Communication, particularly the creative and graphic areas of two and three-dimensional design.

(ii) The broad area of Technology in the CDT curriculum.

Much of the teaching within the department is on a team basis and a cooperative attitude is a prime necessity.

The department is concerned with the teaching of design and technology, and offers in-service and continuing education. The successful applicant will be expected to assist in the planning and teaching of any of these courses.

The salary will be on the scale £14,166 p.a. inclusive of London Allowance.

Write for further details to the Senior Assistant Registrar, Goldsmiths' College, New Cross, London SE14 5NW. Closing date for receipt of completed applications 15th March 1985.

**MINISTRY OF DEFENCE
Burnham Lecturer Grade 1**

Applications are invited from suitably qualified persons to fill this post as soon as possible.

DUTIES

To work as a member of a team, and to be responsible to the Base Education Officer through the Correspondence Course, of RN, RM and WRNS students for the GCE (RN) 'O' Level Examinations in English, Geography, History, and General Studies.

Qualifications required are: a. A degree in a relevant subject, b. A teaching certificate, c. Experience in teaching any of the following subjects: English, Geography, History, or General Studies, d. Experience of service education and distance learning would be an advantage.

Salary will be in accordance with the Scales for teachers in Establishments for Further Education, England and Wales currently £5,910-£10,512 plus a pensionable allowance of 17% of salary for the slightly longer working year.

Superannuation: The appointment is superannuable under the Teachers' Superannuation Scheme and will attract established civil servant status.

THE CIVIL SERVICE IS AN EQUAL OPPORTUNITIES EMPLOYER

APPLICATION FORMS and Further Information may be obtained from Ministry of Defence, CM(8) 143, Room 339, Lacon House, Theobalds Road, London, WC1X 8RY. Closing date for completed application forms, quoting AW1655, is 29 March 1985.

BRITANNIA ROYAL NAVAL COLLEGE, DARTMOUTH

Lecturer/Senior Lecturer

LEEDS CITY COUNCIL DEPARTMENT OF EDUCATION

LECTURER IN FULL-TIME

Applications are invited for a Lecturer to work in a small team which promotes and runs a variety of courses designed to improve the quality of education and to develop relationships in the multi-cultural workplace in agencies which provide a service to the community.

She/he will be required to set up, plan and run a variety of training courses and experience/qualifications in several of the following training areas: industrial, community, industrial or trade union work, multi-cultural education, in English, knowledge of Afro-Caribbean/Asian cultures and languages.

An application form, together with further particulars, is available from the City Council, 4th Floor, Meriton House, 155 Meriton Centre, Leeds LS2 8DT. Tel: (0532) 455831.

Closing date for applications: Monday 11th March 1985.

Leeds is an Equal Opportunity Employer. 220026

SUNDERLAND BOROUGH OF SUNDERLAND MONKWEARMOUTH COLLEGE OF FURTHER EDUCATION

LECTURER GRADE I IN PHYSICAL EDUCATION

Applications are invited from suitably qualified persons to teach Leisure Studies to full-time Leisure Studies/Physical Education students and to assist in the management of the College.

Applicants must possess a teaching qualification or appropriate degree, teaching experience of at least 3 years in the 16-18 age group would be an advantage.

Salary: £5,910 - £10,512 p.a. Duties to commence 1st September 1985.

Further details available upon receipt of standard application form, together with further particulars, from the Principal, Monkwearmouth College of Further Education, Swan Street, Sunderland SRS 1 1JH.

Closing date for applications: 15th March 1985. 220026

WILTSHIRE SALISBURY COLLEGE OF FURTHER EDUCATION

Applications are invited from suitably qualified persons to fill the following posts:

LECTURER GRADE 1 to teach FOOD PREPARATION and related theory to both Craft and BTEC students. Good oral and written communication skills are essential. City and Guilds of London Institute qualifications in teaching and experience of a teaching and supervisory role would be an advantage.

Required from 1st September 1985.

LECTURER GRADE 1 to teach FOOD PREPARATION and related theory to both Craft and BTEC students. Good oral and written communication skills are essential. City and Guilds of London Institute qualifications in teaching and experience of a teaching and supervisory role would be an advantage.

Further particulars and application forms are available from the Principal, Salisbury College of Further Education, Salisbury SP1 1JH. Tel: (01262) 220026.

WILTS/SHIRE

Applications are invited from suitably qualified persons to fill the following posts:

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WARWICKSHIRE MID WARWICKSHIRE COLLEGE OF FURTHER EDUCATION

Applications are invited for the following posts. Closing date for applications is 1 September 1985.

LECTURER II IN MODERN LANGUAGES

To teach French as the main subject. G.C.E. 'O' and A level and Institute of Linguists.

LECTURER IN ACCOUNTING AND COMPUTER APPLICATION TO BUSINESS PRACTICE

To teach on Secretarial, National Diploma and Professional Certificate courses.

Further particulars and application forms may be obtained from the Principal, Mid Warwickshire College of Further Education, 4th Floor, Meriton House, 155 Meriton Centre, Leeds LS2 8DT. Tel: (0532) 455831.

Closing date for applications: Monday 11th March 1985.

Leeds is an Equal Opportunity Employer. 220026

WIGAN POLITAN BOROUGH OF WIGAN LEIGH COLLEGE IN ASSOCIATION WITH H.M. YOUTH CUSTODY CENTRE

Required as soon as possible qualified teachers for some 300 trainees aged between 15-21.

LECTURER GRADE I REMEDIAL

with knowledge and experience of post-16 remedial work, with the necessary interest and ability to respond to the challenges of the role.

You will be placed on the staff of Leigh College and assigned full time to the Custody Centre for one year in the 16-18 age group would be an advantage.

Salary: £5,910 - £10,512 p.a. Duties to commence 1st September 1985.

Further details available upon receipt of standard application form, together with further particulars, from the Principal, Leigh College, Swan Street, Sunderland SRS 1 1JH.

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WILTS/SHIRE

Applications are invited from suitably qualified persons to fill the following posts:

LANCASTER S. MARTIN'S COLLEGE OF HIGHER EDUCATION

LECTURER IN MATHEMATICS

Applications are invited for the following posts. Closing date for applications is 1 September 1985.

LECTURER II IN MODERN LANGUAGES

To teach French as the main subject. G.C.E. 'O' and A level and Institute of Linguists.

LECTURER IN ACCOUNTING AND COMPUTER APPLICATION TO BUSINESS PRACTICE

To teach on Secretarial, National Diploma and Professional Certificate courses.

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CAYMAN ISLANDS GOVERNMENT DEPARTMENT OF EDUCATION

Applications are invited from qualified teachers of proven ability with appropriate qualifications for the following posts to be filled in September 1985. Entry points to schools will be determined by qualifications and experience up to a maximum of ten years.

Salary scales: Grade 1 C\$13,644-C\$18,872
Grade 2 C\$15,334-C\$22,300
Grade 3 C\$17,208-C\$24,338

There is no income tax in the Cayman Islands. C\$1 = US\$1.20. Relationship to Pound Sterling varies with the US Dollar exchange rate.

VACANCIES TO BE FILLED

1. Cayman Islands High School, Grand Cayman (Comprehensive Mixed) - Roll 560, Ages 14-18
2. Head of Department, Music, with experience of brass bands and orchestras (Grade 2)
3. Teacher of Geography and History up to 'O' level in the Social Studies Department (Grade 1)
4. Teacher of Craft, Design and Technology (Grade 1)
5. Special Education Teacher. Candidate should have particular expertise and experience in working with children with language difficulties (Special School experience would be an advantage) (Grade 2)
6. Teacher of Mathematics and Computer Science up to 'A' level (Grade 1)
7. Cayman Brac High School, Cayman Brac (Comprehensive Mixed) - Roll 180, Ages 12-18
1. Teacher of English with responsibility for the Library (Grade 1)
2. Teacher of Mathematics (Grade 1)
3. Teacher of History/Geography (Grade 1)
4. Teacher of Art (Grade 1)

Successful candidates will additionally be expected to involve themselves in Special Education, Music or Drama. Applicants must have a successful record in preparing candidates for all British examinations.

- C. Cayman Islands Middle School, Grand Cayman (Mixed) - Roll 620, Ages 10-13
1. Head of Department, English (Grade 3)
2. Head of Department, Religious Education (Grade 2)

The successful applicants will be responsible for reviewing and developing the English or Religious Education curriculum as appropriate. He/she will be responsible for the day to day organisation of the respective department including homework, scheduling or work, ordering and control of supplies, conduct or examinations and other means of assessment.

3. Teacher of Special Education (Maths and Science) (Grade 1, two posts)
- The successful applicants will possess the necessary qualifications, experience, understanding and patience to teach small groups (about 16 per class) of students with severe learning disabilities. The Maths/Science course covers areas which overlap and complement each other.
- D. Lighthouse School, Grand Cayman (School for Emotionally Disturbed)

A teacher of the emotionally disturbed with experience in 'special' schools (Grade 2)

All appointments will be for two years in first instance, but may be extended by mutual agreement.

Application forms and notes on conditions of service, including housing, medical benefits, passage, leave and baggage entitlements are available on request from:

The Cayman Islands Government Representative, Hamilton House, 17b, Broad Street, London W1V 7RS, Tel: 01-499 8823

Successful candidates should be notified by 15 March 1985. Interviews will be held in London. Expedited consideration will be given to those who have been successful in previous interviews. All expenses incurred in travelling to and from interviews will be borne by the candidate. Successful candidates, however, will have their expenses refunded. (12037)

TEACHERS REGISTER

We shall soon be closing our Register for Candidates for those people seeking jobs overseas for September 1985. If you have not already done so, why not send for details of our application procedures etc? After completing our forms you will be invited to an informal interview at our offices in Birmingham. Interviews are usually scheduled during school holiday periods. We can then discuss your hopes and aspirations, and tell you about and possibility of being able to place you in a suitable school abroad. There is absolutely no charge whatsoever, but you will have to be prepared to pay your own travel expenses to Birmingham to attend for a Register Preliminary Interview. Please send £1 to cover postage/administration costs, together with a large, stamped, self-addressed envelope to Dept T/RES at the address given below.

Education Consultants

Saudi Arabia SENIOR SCIENCE INSTRUCTOR

£27,000 p.a. tax free

General Arabian Medical and Allied Services Limited (GAMA) is the Hospital Management Company providing consultancy services to the prestigious Riyadh Al-Khazir Hospital Programme in Saudi Arabia. The Programme includes the 620-bed Armed Forces Hospital in Riyadh, a 61-bed satellite Hospital 50 miles to the South at Al-Khazir and a number of peripheral clinics. These modern, well equipped hospitals provide sophisticated medical services to the employees of the Armed Forces and their dependants.

The Training Department now has a vacancy for a Senior Science Instructor to provide and manage an effective Basic Sciences teaching programme for employees of the Programme. Applications are therefore invited from candidates who possess a post-graduate teaching certificate with a minimum of 6 years' experience teaching basic science subjects, 2 of which must have been at a senior or managerial level. Experience of teaching vocational trainees and students whose first language is not English, will be a distinct advantage.

Benefits

This single or married status contract is offered on a two year renewable basis and provides free fully-furnished accommodation; four weeks leave for every six months of service; free flights (including leave flights) and a two months salary bonus on satisfactory completion of contract. Salaries are paid in Saudi Riyals and the sterling salary quoted is calculated at the current exchange rate of 4.0 Saudi Riyals = £1.

Please write with a comprehensive curriculum vitae or telephone for an application form to:

Susan Grice,
GAMA INTERNATIONAL LTD.,
6 Duke of York Street, London SW1Y 6LA.
Telephone: 01-839 6843.



INTERNATIONAL SCHOOL OF TANGANYIKA LTD.

Dar Es Salaam, Tanzania

The school offers an international education to some 1500 pupils aged 4-19 years drawn from 68 nationalities and employs a faculty of 126 (110 FTE). The secondary section offers courses leading to London (overseas) GCE 'O' level and the International Baccalaureate.

Well-qualified and experienced teachers are invited to apply for the following posts:-

To I.B. level: Biology, Chemistry, Computer Science, Economics, English, History, Mathematics, Theory of Knowledge.

To Ordinary level: English, General Science, History, Mathematics.

Primary: Teacher wishing to specialise in Computer Studies and Physical Education for Juniors. Specialist full-time teacher of Music to Infants. Teachers of Infants classroom teachers with experience/qualifications in English as a Second Language or remedial work will be especially welcome.

Passages, a generous baggage allowance, accommodation, UK based medical insurance, free education and an annual leave allowance are provided. The initial contract is for two years renewable by mutual agreement.

For full details and application forms send a LARGE S.A.E. to The Secretary: 25 Hall Lane, Maghull, Merseyside, L31 3DY.

Interviews in UK in latter part of March. (12042)

Kobe Japan International School

The following teachers are required for September 1985 for a private school providing education in English for children of the international community.

Top Infants Middle Infants Nursery

CANDIDATES - should be single females with at least 3 years' experience, the ability to play the piano would be an advantage for all three posts.

SALARY AND CONDITIONS - Local scale commencing at £7,475 (at current exchange rate) plus bonus. Accommodation provided. Return air fare paid. Two year contract.

For details and an application form, please apply to Mr. P. J. Smith, Gabbitts-Thring Services, Ltd., 6-7 & 8, Seaville Street, Fitchley, London W1X 2BR. Telephone 01-734 0161.

Gabbitts-Thring

OVERSEAS POSTS continued

INILINUA

Current vacancies for EFL teachers in Ilulissat, Upper Second Degree and EFL Prof. Cert. (or equivalent) required. Immediate vacancies also in Godthabs. Level German preferred. Airfare, accommodation, insurance, pension, health insurance, etc. as appropriate. Applications to: Inilinn Teacher Service, 10 Rotten Park Road, Birmingham B16 9JL. Please enclose CV. (134361)

MADRID

English School (all English speaking pupils) requires for Sept. 1985, young single (or married) female teachers with experience in English, short and/or long term. Please write sending CV and photo to: The English School, 10324, Priory House, 11, 12th Lane, EC1M 4BB (12036)

GREECE

TEACHERS FOR GREECE Required for September 1985. English, with teaching experience or international school. Applications to: The Greek School, 10324, Priory House, 11, 12th Lane, EC1M 4BB (12036)

PORTUGAL

TEACHERS FOR GREECE Required for September 1985. English, with teaching experience or international school. Applications to: The Greek School, 10324, Priory House, 11, 12th Lane, EC1M 4BB (12036)

ROME

TEACHERS FOR GREECE Required for September 1985. English, with teaching experience or international school. Applications to: The Greek School, 10324, Priory House, 11, 12th Lane, EC1M 4BB (12036)

SAUDI ARABIA

TEACHERS FOR GREECE Required for September 1985. English, with teaching experience or international school. Applications to: The Greek School, 10324, Priory House, 11, 12th Lane, EC1M 4BB (12036)

LONDON

TEACHERS FOR GREECE Required for September 1985. English, with teaching experience or international school. Applications to: The Greek School, 10324, Priory House, 11, 12th Lane, EC1M 4BB (12036)

SOUTH AFRICA

TEACHERS FOR GREECE Required for September 1985. English, with teaching experience or international school. Applications to: The Greek School, 10324, Priory House, 11, 12th Lane, EC1M 4BB (12036)

SPAIN

TEACHERS FOR GREECE Required for September 1985. English, with teaching experience or international school. Applications to: The Greek School, 10324, Priory House, 11, 12th Lane, EC1M 4BB (12036)

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SPAIN

TEACHERS FOR GREECE Required for September 1985. English, with teaching experience or international school. Applications to: The Greek School, 10324, Priory House, 11, 12th Lane, EC1M 4BB (12036)

WEST GERMANY

TEACHERS FOR GREECE Required for September 1985. English, with teaching experience or international school. Applications to: The Greek School, 10324, Priory House, 11, 12th Lane, EC1M 4BB (12036)

ZAMBIA

TEACHERS FOR GREECE Required for September 1985. English, with teaching experience or international school. Applications to: The Greek School, 10324, Priory House, 11, 12th Lane, EC1M 4BB (12036)

ilea Inner London Education Authority

Senior Staff Inspector for Secondary Education

Salary range: £22,242-£24,114 plus £1,347 London Weighting Allowance

Applications are invited for the leading inspectorate post for secondary education in the Authority, following the retirement of Mr. Denis Felsenstein. The senior staff inspector advises the Chief Inspector on all aspects of secondary education and, in particular, on the organisation, management and curriculum of about 150 secondary schools. The person appointed will have the direct assistance of twelve district inspectors of secondary education and a number of advisory headteachers and will also receive advice from, and work in association with, leaders of specialist inspectorate teams. Particular concerns in the immediate future will be the Authority's initiatives, including those of race and gender and those arising from the major report, 'Improving Secondary Schools' and provision for 16-19 year olds in association with the further and higher education inspectorate team. Duties also include advising on the appointment and professional development of headteachers and oversight of the development of inspections and quinquennial reviews of secondary schools. The person appointed must have the ability to play a major creative and organisational role in the process of improvement of secondary education in Inner London.

Suitable for job sharing.

Application forms and further details are available from the Personnel Services Division (Ref: EQ/Estab 1B), Room 368, the County Hall, London SE1 7PB. Please enclose an SAE. Closing date for the return of completed applications is 20/3/85.

ILEA IS AN EQUAL OPPORTUNITIES EMPLOYER

SOUTH MANCHESTER COMMUNITY COLLEGE

Fielden Park Centre, Barlow Moor Road, West Didsbury, Manchester, M20 8PQ

Chief Administrative Officer

PO3 - £12,243 to £13,326

South Manchester Community College is a new Group VII college formed on 1st April 1984 from the amalgamation of Fielden Park College of Further Education, Withington College of Further Education and the South Area of Community Education.

This is a senior management post for which applications are invited from well qualified persons with a good administrative background preferably including experience of a senior administrative post in a large F.E. college. The person appointed will be an important member of the senior management team and will take part in planning and administration of the college in accordance with the terms of the appointment. The Chief Administrative Officer will also act as Clerk of the Governing Body and the Academic Board. A copy of the College Instrument and Articles will be sent to all short-listed candidates.

Application forms and further particulars are available from the Principal (FAC N. Regan), South Manchester Community College, Fielden Park Centre, Barlow Moor Road, West Didsbury, Manchester M20 8PQ. Telephone no. 061-434 4821. Closing date 8 March, 1985.

MANCHESTER City Council

Manchester City Council is an Equal Opportunity Employer, and we positively welcome applications from women and men, regardless of their race, ethnic or national origin, disability, age, sexuality, or responsibilities for dependants.

Administration Local Education Authority

Work on American grant's summer from June to end August. See ad under Holiday Accommodation. (12786)

Work on American grant's summer from June to end August. See ad under Holiday Accommodation. (12786)

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Work on American grant's summer from June to end August. See ad under Holiday Accommodation. (12786)

ADMINISTRATION LEA CONT.

ASSISTANT EDUCATION OFFICER

16+ and MSC Programmes Co-Ordination

Principal Officer Points 46 - 48, £14368 - £15387

Applications are invited for this post from suitably qualified and experienced candidates.

Duties include co-ordination and development of post 16 provision in Schools and Colleges and of MSC programmes in the County's educational and administrative establishments. The post will be based at Northampton House. The closing date for applications is 15 March 1985. Interviews will be held during the week commencing 1 April 1985. Job Ref: G/ST/VS/E27

ASSISTANT EDUCATION OFFICER

(Finance)

Principal Officer Points 43 - 46, £13326 - £14358

This post has been identified within a restructuring of the existing establishment in order to focus on financial matters within the Education Department.

The AEO is part of a central group supporting the Management Team and senior officers and is responsible for the preparation of estimates, expenditure monitoring reports, and oversight of all financial procedures affecting schools and colleges, in collaboration with staff of the County Treasurer's Department.

The post is located within the Education Department at Northampton House.

Applications are sought preferably from professionally qualified staff with management and accountancy experience at senior level.

Job Ref: G/ST/VS/H1

For either of the above posts, application form and further details can be obtained from the County Education Officer, Northampton House, Northampton, NN1 2HX. (Please quote the appropriate reference number). Closing date: 15 March 1985.

Northamptonshire
Education

Sheffield City Polytechnic

Senior Careers Advisor

PO (37-40) £11,269 - £12,243 PA

To be responsible for the overall direction, and day to day running of the Careers Advisory Service, duties range from managing a team of careers advisors to conducting career counselling interviews.

The successful applicant is likely to be an Honours Graduate with previous experience at a senior level in industry or commerce. Candidates should possess an appropriate qualification and/or previous experience of careers work within higher education. A knowledge of Microcomputer Applications in Office Systems would be an advantage.

Further details and form of application are available from The Staff Officer, Trent Polytechnic, Burton Street, Nottingham NG1 4BU.

Closing Date: 18th March 1985.

Bedfordshire Education Service County Advisers/ Inspectors

For (a) Primary Education (b) Geography/History

Salary Scale: Burnham Group 8/9 (Currently £14,864-£15,963 and £15,792-£17,112 respectively).

Applications are invited from suitably qualified and experienced candidates for these posts in the County Inspection and Advisory Service. The appointments will be initially as County Adviser at Group 8 with the prospect of progress to County Inspector Group 9.

(a) Primary Education

The successful candidate will be responsible for advice and inspection in primary schools in the northern area of the County and specialist advice and inspection of infant education throughout the County. An additional advantage will be the ability to offer specialist advice in the field of nursery education.

(b) Geography/History

The successful candidate will be responsible for advice and inspection in either Geography or History. An additional advantage will be the ability to work in both areas and/or in the field of Personal and Social Development.

Essential car user allowance. Car loan scheme. Approved removal expenses paid.

Application form and further particulars for each of these posts are available from D P J. Browning CBE MA, Chief Education Officer, County Hall, Bedford, MK42 9AP, or telephone Bedford 63222 Ext. 345.

Closing date for applications Monday, 11th March 1985.

The Council is an Equal Opportunity Employer (12032)

Bedfordshire

Careers Officer

Lincoln SE £7624-£8282

Required at Lincoln Careers Office, Brayford House, Lincoln.

Applicants should preferably be qualified and/or experienced Careers Officers, including students who have recently completed, or will shortly be completing, DCG courses.

The person appointed will be responsible for assisting young people to obtain employment, further education and/or training and for the development of the Youth Training Scheme to meet the needs of young people primarily in Lincoln and the surrounding areas. He/she will also assist the other Careers Officers in selection for and follow-up and counselling of individual young people during their transition from education to employment and/or training.

Applicants must hold a full current driving licence and a casual user car allowance is payable. Relocation expenses will also be reimbursable in any appropriate case where the successful candidate is buying and selling a property.

This post is grant-aided by the Department of Employment and will be subject to review if the grant is withdrawn or modified.

Application forms and further details are available from the County Personnel Officer, Careers Offices, Lincoln LN1 1YL. (Telephone Lincoln 0522 24482. Please quote ED 154.)

CLOSING DATE: 18th March 1985 (12031)

Lincolnshire County Council

WIRRAL AN EQUAL OPPORTUNITY EMPLOYER

SENIOR CAREERS OFFICER (EMPLOYER LIAISON)

£8532 - £9114

Qualified and experienced Careers Officer to manage and co-ordinate employer liaison activities within the Careers Service and develop the collection and dissemination of manpower intelligence in co-operation with other agencies active in this field (post funded by Department of Employment).

Application forms and further details from Director of Education, Municipal Offices, Cleveland Street, Birkenhead, Wirral, (051-647 7000 ext. 355) returnable by 15 March.

(14001)

DERBYSHIRE

COUNTY COUNCIL
OUTDOOR ACTIVITIES
ORGANISER (2 POST)
See Youth and Com...

KENT
COVER WATERSPORTS
CENTRE
enquire BCU 51 for 52.
Contract. 25.194/ann
YA 51/Boardsailing ins
or also considered
Contact Mark Dutton,
(0304) 201848, Ext. 5
application form and job
description. (40091) 68

Psychologist
Group 8 – £14,664–

on Membership Agreement
required to become a member

particulars are available
from Education Personnel
Unit M80. Quote reference
7033 or 7036.
Director, Principal Education
No. 081 228 5404. Cloaking

Service

TEACHERS
(MATHEMATICS)
Tel. Ex. 583
(NORTHERN IRELAND)
as Inspectors of
Education for Northern
REFERENCE SB13/85)
or equivalent
of substantial teaching
in one primary or
higher levels in schools or
working with other
qualifications in or curricular
the creative/aesthetic
in advantage.
expected to
work in primary.
Following fields:
Curriculum:
Curriculum in primary

CE SB28/85)
second class honours

of professional
and general
Colleges of
Education,
and teachers
Department may, from
time to time,
be required to work
if necessary, work
qualifications and
to may in certain
in refund of
appointments,
to higher grades
Commissions may
agents who appear
best qualified
(614)

[illegible]

GENERAL

Inspectors of schools give a service of professional advice to the Department, carry out general and specialist inspection duties in schools, Colleges of Further Education and Colleges of Education, contribute to in-service training of teachers and undertake other tasks which the Department may, from time to time, require.

6.

The successful applicants may be required to work anywhere in Northern Ireland and, if necessary, work outside normal office hours.

Starting salary will be related to qualifications and experience and successful applicants may in certain circumstances be entitled to a partial refund of expenses incurred in taking up the appointments.

Opportunities exist for promotion to higher grades within the Inspectorate.

The Northern Ireland Service Commissioners may decide to interview only those applicants who appear from the information available to be best qualified.

(8181)

Please write to the Civil Service Commission, Rosebank House, Upper Kesh, and send Form 1 to the PSR at Telephone Dandonald 1962 for an application form (noting the extension number indicated and quoting the Job Reference). Completed forms must be returned to us not later than the closing date stated.
